DOMESTIC ENGINEERING

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The Builders

By "The Spectator"

Before the Spectator joined the little circle comprising those who labor to make this orange-coated weekly a welcome visitor on desks and reading tables of progressive plumbers, heating engineers and contractors, he knew something of the high ideals and purposes that actuated them.

He knew that they considered the fortunes of their magazine to rest on nothing but their ability to gather information in one quarter that would be helpful to subscribers in thousands of other quarters, and their courage in adhering steadfastly to what seemed best practices and policies to the leaders in the heating and plumbing professions. As the weeks have rolled along and the presses have rattled forth their messages that go to all parts of the country, it has been a joy to the Spectator to find something in every issue that harmonized with his own preconceived notions of trade ethics. Nor has this joy been one whit allayed by the discovery only recently, in an outside quarter that our diagnosis of a certain malady—a chronic malady in the heating business—is all wrong. Individually and as an organ of educational progress we have long deplored the existence of the "skate" contractor. The man who leaves in his wake a trail of shoddy installations, who affiliates himself with those who furnish material on any terms that will move it out of their warehouses, and who has no more regard for the welfare of his profession than that it may be maintained by those who are scrupulous, while he plays the pirate.

Recognizing the malady we have long been wont to ascribe to this species of contractor the character of germ, the germ that perpetuates the malady.

That he thrives year after year has ever been something of a marvel, for we likened him to the carpet-logger—the con-man, here for a quick clean-up today—gone, we know not whither, tomorrow.

Quite inadvertently and accompanied by something of a shock we have made the discovery that the real germ has never been under our microscope.

The Spectator has an acquaintance, one who is, as we say, enterprising—a hustler, one who has an eye for the main chance. This friend has made money in various perfectly legitimate ways and in the past few years he has devoted part of his time and money to building apartment houses.

The Spectator was discussing this important branch of industry with his acquaintance.

"Do you find it fairly lucrative?"

"Oh, yes," came the prompt answer, "provided you know the System."

"System?" we queried.

"Yes—of holding down the cost," he answered. "I always try to get fairly good locations and I always build something a bit cheaper than the other buildings in those neighborhoods. That's the system. It's the only system. People will pay the rents for the neighborhood and they care not a hang about plumbing fixtures and heating plants."

We had heard enough, and though we hate to acknowledge it, we had found in our friend the real germ.

We know that he can exonerate himself. Like the yellow journals and the purveyors of theatrical mediocrities, he can claim that the people cry for them, and quite likely he has no annoying upheavals of conscience because his miserable shacks, like hundreds of others, built by those "wise to the System," are retarding the development of Chicago, "The City Beautiful," and lowering the standard of workmanship in all the building crafts. On that score we pick no bone with him for to inject patriotic sentiments into a money-bag is beyond the capacity of our pumps. We do not, however, forgive the "skate." No longer shall we condemn him as the germ. He has none of the creative force and energy of a germ. He is merely a fungus-growth clinging tenaciously to our city builders.

STEPS IN SANITARY PROGRESS.

By Thos. J. Claffy, Assistant Chief Sanitary Inspector, Chicago.

In the elimination and disposal of dangerous wastes, Nature has provided for the safety of man and animals, and as long as Nature's laws are observed, this safety continues. The fishes of the sea, the birds of the air, and the animals of the fields, are healthy and vigorous and strong in their natural environments, but soon sicken and succumb to inevitable disease when placed in the restraint imposed by unnatural surroundings; so it is with man.

Nature's scavengers eliminate and dispose of body wastes. Their functions remain undisturbed in the purely natural atmosphere of man and the animal. The restraint imposed by unnatural surroundings retard or destroy their functions and endanger the comfort and safety of the health of the individual man or animal.

Civilization imposed upon the human race a problem which never has, and I dare say never will be, solved. When mankind congregates in crowded houses in cities, the problem of wastes becomes at once serious and difficult.

To dispose of body and domestic wastes in a convenient, safe and sanitary manner, became the business of a particular craftsman who eventually was known as a plumber. He plied his trade in the early days of history, so well that even today specimens of his handicraft are found among the ruins of ancient cities. Marble, stone and brick or tile were the materials used, except that lead was used sparingly for water pipes.

There was but little change in methods or materials used by plumbers for centuries, and indeed but slight attention given to the sanitary disposal of wastes.

Macaulay's chapter on the state of England in 1685 gives us a good illustration of what was common in all large cities at that time. "Cabbage stalks and rotten apples accumulated in heaps at the thresholds of the Countess of Berkshire and of the Bishop of Durham. Saint James Square was a receptacle for all the offal and cinders, for all the dead cats and dead dogs of Westminster. The pavement was detestable. The drainage was so bad that in rainy weather the gutters soon became torrents. Several facetious poets have commemorated the fury with which these black rivulets roared down Snow Hill and Ludgate Hill, bearing to Fleet Ditch a vast tribute of animal and vegetable filth from the stalls of butchers and green grocers. This flood was profusely thrown to right and left by coaches and carts. To keep as far as possible from the carriage road was therefore the desire of every pedestrian. When the evening closed in, the difficulty and danger of walking about London became serious indeed. The garret windows were opened, and pails were emptied, with little regard to those who were passing below."

Such conditions prevailed for some considerable time, and need we ask why epidemics of plague were so common and so fatal? Plumbing as we know it was almost unknown in Colonial days. The fixtures were crude and cumbersome. Marble basins for lavatories, drinking fountains, etc., were used principally for the display of the sculptors' art.

Sanitary pottery was not manufactured in the United States until some years after the middle of the nineteenth century. Previous to this time, such ware was imported from England and it was crude, cumbersome and expensive.

The first type of closet in which earthenware was used was composed of about three-fifths iron and two-fifths pottery, so that it was necessary to enclose the thing in a cabinet of wood to cover its unsightliness. Any type of fixture which has an inaccessible water seal is open to objection.

You have seen closets funnel shaped with no visible water; nothing but darkness below and the mysteries of its depths revealed by their smell. Such fixtures are a nuisance at best and are being eliminated by sanitarians as fast as conditions permit.

The non-absorbent qualities of plumbing fixtures is important, and designers and manufacturers abreast of the times are producing pottery which is as impervious as glass. This was proved a few years ago in one of our large manufacturing establishments where vitreous china lavatories were installed for the employes, one of whom was found washing his boots in a lavatory. There was no smell afterwards of the boots.

The piping in houses for plumbing systems is of vital importance. Lead was used exclusively for this purpose up to a few years ago. Now iron and brass have displaced it, and we have better plumbing and more of it. Iron decomposes rapidly under given conditions, in recognition of which ordinances require the use of cast or galvanized iron in sanitary plumbing systems.

Ventilation of the system is as necessary as are standards in quality of material. Lack of ventilation and defects in materials or installation have been the cause of serious illness induced by the insiduous sewer gas poison. There is one which is fresh in my memory and has peculiar significance to the cause, in which I am sure you are all interested.

A few years ago I was assigned to the inspection of the plumbing system in a physician's residence. A plumber was waiting with materials for the application of a test to the system. The physician informed us that his youngest child, an infant of about ten months, was ill with a low persistent fever which puzzled himself and physicians who had been called in. The child had been ill for about two months and it seemed impossible to do anything for it. The test was applied and after a short time the odors of peppermint in the front part of the house, which, by the way, was a fine large brick residence of about 12 rooms in a fashionable neighborhood, disclosed a leak in a soil pipe immediately below the nursery in which the sick child lay. The season was late winter and the heated interior with closed windows acted as a sort of vacuum which drew in the sewer air and gases, and the weak infant was the first victim. At the time of inspection, its mother was feeling the effects of the poison, headaches and languor keeping her confined to the house. The cause had been discovered and a starting point to convalescence provided.

Not Too Healthy.

Client—"Before we decide on the house, my husband asked me to inquire if the district is at all unhealthy."

House Agent—"Er—what is your husband's profession, madame?"

Client—"He is a physician."

House Agent—"Hum—er—well, I'm afraid truth compels me to admit that the district is not too healthy."—London Opinion

Water Supply for Country and Suburban Residence Work

By Harold L. Alt

Probably the most important and at the same time the most difficult problem to be solved from the plumbing end for country residences and suburban houses is the question of securing an adequate and proper water supply. Of course, in any cases there are pipes from some nearby municipal or village water works which can be tapped, but oftentimes the distance is too great to be overcome, in this manner, and it then devolves into obtaining a suitable water supply by one of two means; either from surface waters or from underground sources. If there are any nearby streams, lakes or springs of suitable purity, the problem is very much simplified, but in case these are lacking, it becomes oftentimes a very difficult and expensive proposition to secure the necessary water and deliver it at the points in the building where it may be desired.

Taking up the surface water first, there are three ways of obtaining this, depending upon the situation of the building in regard to the surrounding country and the character of the nearby streams, springs or lakes, if any. If there is considerable difference in elevation between the level of supply and a possible point of discharge for surplus water, a water ram can be installed as is shown in Fig. 1, and is a very simple, though wasteful device. It is usually necessary also to provide some means of keeping the ram from freezing during cold weather, and it is often necessary in order to conform to the contour and local conditions to locate the ram at quite a distance from the building, thus cutting down the discharge from the ram owing to the pipe friction. Actual experiments on rams show that they range from a 70 ft. drive x 12 ft.

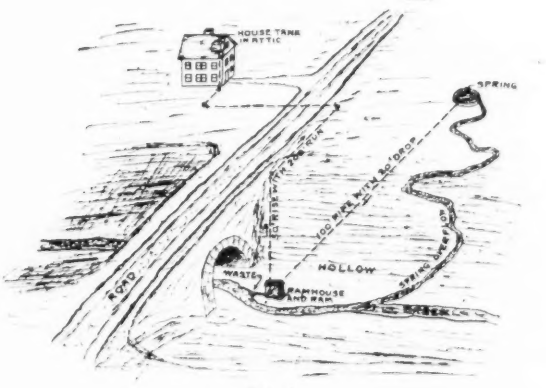


Fig. 1.

head and 100 ft. discharge with a rise up of 50 ft. using 2.1 gal. per minute to deliver .3 gal. per minute, to a 125 ft. drive x 25 ft. head and 400 ft. discharge with a rise up of 200 ft. using 18 gal. per minute to deliver 2 gal. per minute at point of discharge. The discharge from the ram may be connected to a house tank located in the high portion of the house and the surplus water taken care of through an overflow in the tank leaving the ram in continuous operation, or a float valve can be placed on the house tank to shut off the ram discharge into the tank, the extra water not needed being taken care of by a relief valve at the ram. Unless the water supply is greatly in excess of the actual quantity required for domestic use, it is very unwise to install a ram owing to the great amount of waste. In Fig. 1 if the quantity of water from the spring were small, it could be piped directly into the basement of the building and cared for as shown in Fig. 3.

Another method of obtaining water for house use when there is a point in the supply where the level is above the highest distributing point in the building is by means of a simple gravity system from an intake located in the stream or lake at such a point, and the water flows by ordinary gravity through a common pipe from this intake

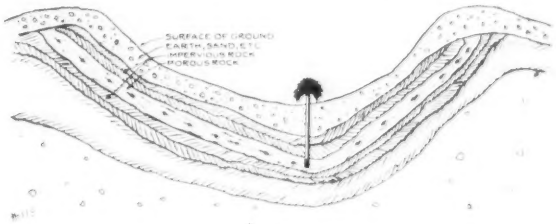


Fig. 2.

down to the house fixtures. This system, of course, is entirely dependent upon the water supply being at an elevation considerably higher than the highest point in the house which it supplies. As a usual thing this is an unlikely condition unless the structure is located on a side of a hill or in a hollow, in which case the body of water may be located far enough above to serve the purpose. It should be remembered that for supplies of surface water, care should be taken that it is not an intermittent supply and in many cases it appears advisable to construct a small reservoir of some sort (unless it is a lake which is being tapped) in order to hold a sufficient quantity of water for use during times of drought.

In procuring water for house service from a surface supply the elements of dirt and contamination have to be taken into consideration as well as the point of constant supply. A supply procured from a surface spring at the spring itself is perhaps the best of all surface supplies. In this case it is usually good practice to build some sort of a small spring house or shelter to keep out leaves and dust and to surround the spring above and for some distance below the surface with a concrete or brick basin to keep the sides from falling in. The suction or gravity supply pipes to the house should be taken out of the spring through the side wall slightly below the surface and should be capped with a non-corrosive strainer.

Should it be necessary to draw a supply from a lake or stream, some sort of an intake and filter are usually provided. If the soil is sandy an intake located on the shore is often used. This is constructed by digging down below the low water mark and lining the sides and bottom of the excavation with perforated wood sheathing, or by building a crib with slotted sides, see Fig. 4. The water will then enter the excavation through the openings be-

ing filtered through the entire bank of sand between the intake and the open water. It should be carefully looked into, however, to see that no stables or sewers drain into this water supply above the intake and care must be exercised not to locate a cesspool or anything of like nature where it could drain into the lake or upstream side of a creek or stream. Let us remember that a sand filter removes solid impurities only and allows all impurities in solution to go through practically unchanged.

Most supplies procured from below the surface are in the nature of wells which may be the common open old-

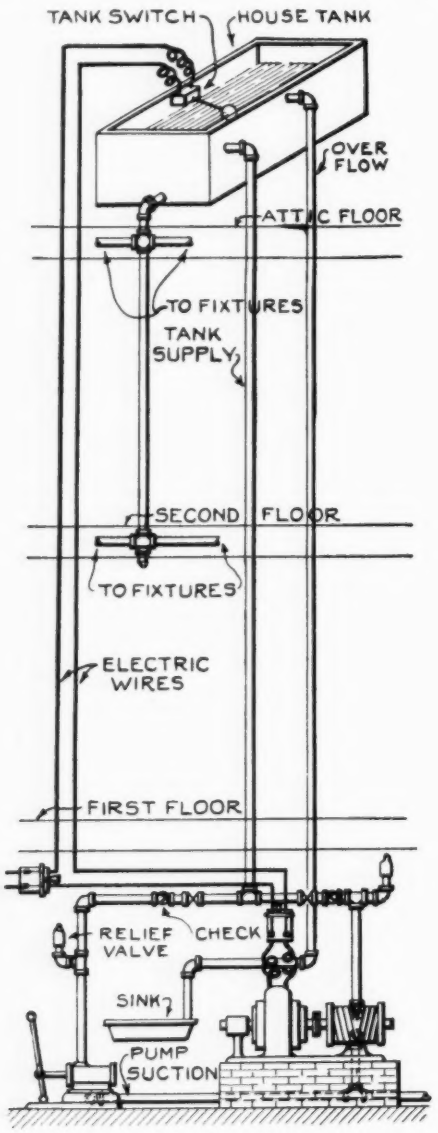


Fig. 3.

fashioned type (which are often found in country places having previously been constructed by the farmers for their own use), the driven well (which is nothing but a pipe with a perforated bottom which is driven down until it strikes water) or the artesian well. The artesian well is a very scarce article so far as ordinary conditions go, owing to the natural conditions necessary to produce one. There must be a solid layer of rock on top, a strata of porous rock below and another layer of solid rock on the bottom. These three layers must be turned up in such a manner as to form a large basin as shown in Fig. 2, so that the rain falling on the exposed edges of the porous rock around the high sides will follow on down as indicated by the arrows in Fig. 2 until it reaches the low point where it gradually collects owing to the impervious rock above and below. There is no outlet for this collection of water and as more water comes down through the porous rock it gradually produces a head or pressure on the lower part. If a hole is bored through the solid upper layer at this low portion the pressure of the water will drive it up through the hole or pipe resulting in what is called the artesian well.

The first two kinds of wells mentioned require some sort of a pumping device to get the water out and if the water supply is rather deep in the ground it will be necessary to locate a pump in the well or in a pit beside the well so as to get down within 20 ft. of the water level. It is customary in these cases to use an ordinary plunger pump such as is usually provided with a hand lever, but a power substitute for hand pumping may be used. In this case the hand lever is usually removed and another connection made to an eccentric which produces a movement equivalent to the hand pumping. If the pump is set down in the well this movement is usually transmitted from the pump house at the top by means of rods down to the pump.

Regardless of what pumping system may be installed there must be some means of power applied to raise the water. Most country residences of any magnitude have some sort of electric connections for lighting or their own gas plant; if both of these are lacking there is left the choice of a hot air engine, gasoline motor, a wind mill, or hand pumping. As before said the ordinary pump should not be placed more than 20 ft. above the level of the water supply; that is to say no pump is likely to give satisfactory service with more than a 20 ft. uptake on the suction side and if it is possible to cut this down any, it is advisable to do so even though the pump has to be placed in a deeper pit or depression. Sometimes it is possible to arrange with a neighboring farmer who has a windmill already installed to tap his discharge line from the windmill and bring the water by gravity to some kind of a well or cistern in the basement of the building and then using that as a suction well with a hand or power located on the basement level to raise the water into a house tank of sufficient size at the top of the building.

Fig. 3 shows a very good method when installing a system of this kind in which the water supply comes in as shown from some outside source and is led directly into a screw pump, which is operated by an electric motor direct connected to the same. The hand pump over at the other side is cross-connected so as to be thrown into service in case of failure of the electric power or any accident putting the screw pump out of commission temporarily. The discharge from both the hand pump and the screw pump are connected after passing through the shutoff valves and checks and carried up to the house tank as shown on the attic floor. In this house tank is located a ball float which operates when the water reaches a predetermined height or falls to a certain low level, either making or breaking the circuit through the switch box on the side of the tank. This means that when the tank is emptied down to the low water point the ball has dropped and closed the circuit through the tank switch so that the electric power is thrown on to the motor of

the screw pump and the pump consequently starts immediately to re-fill the tank. When the water in the tank has reached the high water level just below the overflow the ball float has risen sufficiently to break the circuit through the tank switch box which immediately cuts off the current supply from the pump motor and stops the pump. The check valves are of course to take the water pressure, due to the height of the discharge riser to the tank, off of the pump during its periods of inaction. On top of each pump discharge there is shown a relief valve. This is necessary or at least advisable, on account of the two pumps with valves between; that is to say, one of those shutoff valves next to the checks might inadvertently be left closed and the pump started which would result

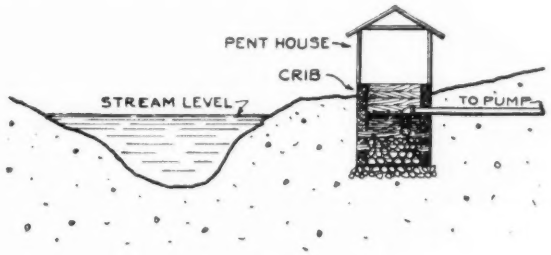


Fig. 4.

in an accident of some sort either to the motor or the pump. The relief valve has been provided to take care of any such contingency. The overflow from the tank should be arranged to spill into a sink preferably the same sink that takes the ice box drains. It is good practice to have this sink located if possible within sight of the hand pump for the reason that, in case of any break down in the electric pump, when a man starts to use the hand pump he has no way of knowing whether his tank has been filled or not unless he sees water coming down through the overflow and it is a very simple matter (provided this overflow is in sight of the hand pump) to pump until the water starts to run. It would not be very convenient to pump half a dozen strokes and run down into some other room to see if any water had come down through the overflow and then run back again and pump some more and so on. There is also placed near the motor in the basement a hand control switch on the electric wires and this is preferably located within reaching distance of the motor so that in case of any accident such as a man getting caught in the shaft or the motor getting a hot box or any reason developing for wishing to stop the pump immediately it will be possible to do so without inconvenience or waiting for the house tank to become full. This system is entirely automatic. Of course it is possible to drive the pump with a gasoline motor or hot air engine, but as soon as this is applied, it becomes a non-automatic system depending upon human agency to start and stop the pump at all times.

If it is impossible to install a house tank because there is no attic space available (as is sometimes the case) an economical substitute is often used consisting of a pneumatic tank located in the basement and of sufficient capacity to supply the building with water for about one day when two-thirds full. Tanks so located are usually connected up with either a combination air and water pump or two separate pumps answering the same purpose. An exceedingly favorable feature of an installation like this is the fire protection that can be obtained for a short time. With a house tank it would be impossible to obtain a fire stream of any force until quite a distance below the tank is reached, while with the pressure tank properly operated a good fire stream can be thrown over the roof of the building for a short time at the very least.

A description of a pneumatic tank system will be the subject of a later article.

One thing that should be brought to the plumber's attention in discussing pumps is the size of the discharge pipe from any pump and the work performed by the pump. Suppose a pump operated by electricity were to deliver a maximum amount of water when running, of say 15 gallons per minute through a 300 foot horizontal run and a 20 ft. vertical riser into the house tank. Now the plumber might look at it that for a long run like this the smaller the pipe the bigger the saving, thinking that a 1-in. pipe would be ample (as it undoubtedly would) to keep an average house tank filled. But stop a minute and let us see the amount of power necessary to move this water and lift it up 20 ft. to the tank.

The friction loss in pounds per square inch on 15 gals. of water per minute going through a 100 ft. length of 1-in. pipe amounts to about 7 lbs. so that for a run of 320 ft. (including the riser) the amount of loss is 3.2 times 7 lbs. or 22 lbs.' pressure loss, which means that the pump has to pump water at pressure of 9 lbs. to overcome the rise of **20 feet** into the house tank plus 22 lbs. more to overcome the pipe friction or a total pressure of about 31 lbs. This is equal in horse power (when the pump is operating at its maximum) to 15 gal. per minute × 8.35 × rise in feet (or its equivalent) divided by 33,000. The 22 pounds of pipe friction loss is equivalent to about 50 ft. additional rise so the amount of power is really

$$\frac{15 \times 8.35 \times (50 \text{ plus } 20)}{33{,}000}$$

which equals ¼ horse power.

Adding about 100 per cent for the usual pump efficiency, this means about ½ horsepower actually and at 10 hours per day about 40 cents per day ($12.00 per month) to pump water.

Supposing, now the plumber has been wise for his customer's benefit, and put in a 2-in. pipe at a very slight additional cost. Then the result would be something like this:

Friction per 100 ft. of 2 in. pipe for 15 gal. per min. equals .26 lbs. or 3.2 × .26 equals about .8 lbs. additional pressure or an equivalent of 2 additional feet in life and his horsepower required for the same amount of water supply would be

$$\frac{15 \times 8.35 \times 22}{33{,}000}$$

equals .08 H. P. × 2 equals .16 H. P. total, or 10 cents for 10 hours' work, which is $3.00 per month. Doubtless you could readily find the number of times the pipe paid for itself in say 10 years' of service.

Darkness.

A blockhead bit by fleas put out the light,
And, chuckling, cried: "Now you can't see to bite!"
—Grecian Anthology

Down to the Rind.

A grocery salesman entering a store found the place in charge of the delivery boy. Upon being asked where the proprietor was, the boy replied:

"I am the whole cheese here." The traveling man departed, leaving a note for the proprietor, which the boy promptly opened.

"Permit me to suggest," it read, "that you are nearly out of cheese."—Success Magazine.

Regulation of Credits in the Building Material Trade

By W. M. Young

Address Delivered Before a Recent Meeting of the Eastern Supply Association, at Hotel Astor, New York City.

When I was invited to address this Association, I thought that it was composed mainly of the plumbing supply jobbers of New York City and vicinity, but now I understand your membership includes also many jobbers and manufacturers from an extensive territory outside of New York. What I have to say has been prepared mainly with a view to our local conditions here, and will have its practical application to those of you who are engaged in business in New York City or New York State, although I hope it may also be of interest to people who come from the outside.

I understand that the credit conditions are more acute here in New York than they are in other states, and yet I have no doubt at all that you gentlemen who come from outside New York City have your own troubles along these lines. The mechanic's lien laws and the laws regulating matters of credit for material supplied on buildings are, I understand, very much more favorable in some of the other states, and yet some of the people from the outside, no doubt, get pretty badly stung. I was talking to one of the largest dealers in masons' supplies in Jersey City the other day, a man to whom I sell large quantities of lime. He was excusing himself for his inability to settle in any other way than by long-time notes, and I said to him, "Why, I thought you had everything easy over here; the laws are much more favorable than they are in New York." "Well," he said, "the laws are much more favorable than they are in New York, but we cannot stand together and take advantage of them. Every dealer is afraid to assert himself, and take advantage of the protection that the law gives him, because he is afraid he will offend his trade." Our trouble here is very largely due to that very element that comes into the problem, in addition to the difficulties under which we work under our Lien Laws here, so that, regardless of the fact that you come from different sections, this question has an interest to all of us.

Every one of us, I presume, is animated by a laudible desire to build up an extensive trade, and we sometimes, if not continually, neglect the caution that prudent business men ought to exercise in the matter of extending credit. A good many of us are too eager to spread out and to build up a great business that shall be a monument to our ability and enterprise. We very often, I am afraid, are too much like the German restaurant keeper, who spread out, enlarged his business, moved to new quarters, and spent $50,000 to fit up a new place. When his friends came in on the opening day, one of them said to him, "Why, Fritz, this is grand, magnificent, but," he said, "do you think it will pay?" "Well," Fritz said, "oh, I don't know. You know we have got to take a chance." That has got to be a standard expression in the building material business, by the way, in New York. We "take a chance." "Well," his friend said to him, "anyway, Fritz, this is a fine place, and it will be a monument to you, even if it doesn't pay." And when the next friend came in after expressing his admiration he raised the same question, "Do you think it will pay?" "Well," Fritz said, "it's just like Herman Schwab said. He says, 'Even if it doesn't pay a dollar, Fritz, why, it will be a tombstone to you.'" I don't think, gentlemen, that I need to point out the application of that story to the conditions here in New York. In our eagerness to build up a business that will be a monument to us, we forget sometimes that we are likely to build up a business that may be a tombstone to us. We are up against conditions here in New York that our local people understand very well without my telling them about it. It might be of interest to you gentlemen outside to understand something about the conditions here. I presume the same conditions obtain to some extent also in the other states. Possibly they may be as bad; I don't know. One of my friends over in Brooklyn, one of the leading members of the Kings County Bar, said to me some months ago, "Young, I had an awful jolt from one of my clients here some time ago. You know, I am an attorney for one of the title companies, appearing in outside matters that are not handled by the attorneys immediately connected with the company, and through my connection with some litigation that arose in that way, a builder came to me, and I handled a couple of suits for him very successfully. He came to me afterward, and said, 'Would you like to shake down ten thousand dollars and do it in about three months, and not cost you anything?'" My friend said: "Well, what have you got; what is it, some second-story work?" "Oh no, nothing of that kind; it's all right; strictly within the law. We will handle it in such a way that you will not become involved in it in any way at all. What we want is the benefit of your advice, and want to have the thing handled through your office on account of the standing of your office in the community, and we will handle it in such a way that you don't become involved in it, or mixed up in it at all." It happened that my friend in the legal fraternity was a large stockholder, in fact, owned a controlling interest in a building material concern in Brooklyn. That wasn't known generally, or to this client of his. He wanted to know how the thing was done, and here is the scheme that was unfolded. His client said, "I have a friend who has been building on the level for years, and he has got tired of it. He goes along from one operation to another, sells his operations, and goes to another, but does not get any further ahead. He has got some very good real estate equities, but the market is bad now, and he wants some cash. He has good credit with all of the building material concerns in New York. He has been paying his bills. We have got a dummy that we will have buy some lots upon Eastern Parkway. We will pay twenty thousand dollars for them, and give back a mortgage for twenty thousand dollars. There is already a mortgage of nine thousand dollars on the lots. We will get an agreement from the man that sells those lots to our dummy." Now, notice, gentlemen, just how the thing is done, because many of you who have been the victims of this sort of skull druggery, may not understand just how the thing is worked out. He says, "Our dummy will buy these lots for twenty thousand dollars, and give a mortgage back to the present owner, and there will be an agreement in that contract of sale, that the man who sells him the lots for twenty thousand dollars, taking his mortgage for it, shall sub-

ordinate to the first payment on the building loan, which is, as you know, fifty per cent of the enclosure payment. When the enclosure payment comes, we will have to pay the nine thousand dollars that is already due on the lot. "Now," he says, "we will organize a corporation. That will be organized through your office, which will give it standing. That corporation will buy those lots from the dummy for thirty thousand dollars. This will all take place before any goods are delivered on the job, so that the material men will not be wise to it. Even if they did look up the record, they would not send anybody out there to investigate the lots, and follow the thing up. We will give back a thirty thousand dollar mortgage for the lots. Now," he says, "we will have to put up five or six thousand dollars cash to carry us up to enclosure. I have already arranged with one of the title companies, for an $80,000 building loan, on a row of apartment houses on that plot. When we get enclosed, we get forty thousand dollars. We will get along rapidly to enclosure, and here is what happens. We get forty thousand dollars from the title company. We pay out nine thousand dollars on the original land mortgage, and reimburse ourselves for the five or six thousand dollars to get us up there. We have paid out fourteen or fifteen thousand dollars, and we have got about twenty-five thousand dollars left. We will divide the swag. You will have one-third, I will take one-third, and my friend, who has always been straight in the past, will take the other third."

My legal friend said, "Who is going to extend you this line of credit? Bring me a list of the people you are going to get your material from." There is just where he got his shock. He was horrified to find the name of his own concern on the list. I don't know what plumbing supply man was on that list. If all of the plumbing supply jobbers of New York are represented here today, I have no doubt that one of you was on that list. The deal was pulled off, but my friend didn't have any part in it. He simply told his client that he wasn't engaged in any second-story work; he would have to go somewhere else. He simply let it go by, and paid no more attention to it. When the crash came, they got the money, and divided the swag, and the building material people appeared on the scene, as they always do here. They came in with their hats in their hands and hayseeds in their hair to negotiate with the mortgage men, and find out under what conditions the mortgage men would be willing to have them take over the houses and complete them, dividing the proceeds realized from the equity, if they got any. That is just one instance.

Another instance is a case I happened to have, unfortunately, a very intimate acquaintance with. It happened two or three years ago. I haven't got caught that way since, and I am not going to get caught that way again. But here is what happened. There is a builder up in the Eastern Parkway district, which, as you local gentlemen know, is one of the best speculative building districts in Brooklyn, who had three big building operations going up there at one time. That fellow's credit was mighty good. The man who supplied the brick on that job is in there for something like sixteen or eighteen thousand dollars. It is not I. I am in the masons' material business, but I didn't supply the brick there. My friend, who is in the brick business, went to the bankers this fellow had been doing business with, and they recommended him very highly. The man who had supplied him with brick on the job preceding felt very badly that he could not land him on these jobs. My friend got the business, and when the operations got to just the right point, they went up the flue. They were covered up with liens inside of forty-eight hours, and the creditors came in. I happened to be present at that creditors' meeting, although, thank the Lord, I wasn't in for very much. The same old story. We came in, as I say, with our hats in our hands and hayseeds in our hair, to find out under what terms we could go ahead with the job, and what sort of a deal we could make with the holders of the mortgage, to pull the thing out, and get our money out of the equity. The state of affairs we found here among other things was this: On one of those operations there was a mortgage of twenty-five thousand dollars in favor of the sister-in-law of the builder, and she was the wife of an itinerant musician who had never made more than ten dollars a week in his life. Now, gentlemen, this is what we are doing here in New York and Brooklyn. When it all has taken place, we scratch our heads, and wonder how the thing was pulled off. It is a good deal like the fellow Abraham Lincoln used to tell about. A big, gawky fellow came into a crossroads store out in Illinois and asked for five cents' worth of gingerbread. The storekeeper dealt out five cents' worth of gingerbread, and the gawky fellow took it, and looked it over and said, "I guess I'd rather have peanuts; I'll trade you this for five cents' worth of peanuts." So he got his five cents' worth of peanuts in a little bag, and put them in his pocket, and started out of the store. The storekeeper called out, "Here, you didn't pay for those peanuts." He turned around and answered, "I traded you the gingerbread for the peanuts." "But," said the storekeeper, "you didn't pay for the gingerbread." "Well," the gawky fellow called back, "why should I? I didn't keep it," and he went out of the store leaving the storekeeper scratching his head to make out just how the thing had been pulled off.

Now, that is just about what we are up against all along the line here in New York and Brooklyn, and we are a set of asses. We always have been. Whether or not the same conditions prevail in other states I don't know, but I do know that the credit question is a serious one everywhere. We can't do business under conditions that prevail here in New York and Brooklyn and make any money. We are working from one year's end to the other for the benefit, not so much of the unscrupulous builder, as for the benefit of the unscrupulous lot man and loan man, who lie awake nights to devise schemes to entrap us. Those are the fellows for whose benefit we have been working from one year's end to the other. There is no reason why we should continue to do it. If the material people in New York and Brooklyn get together like sensible, rational men, and work together along proper lines, there will be no trouble at all about relegating the lot man at least to the position we now occupy. As to the loan man, if the money that is advanced on the building loan is applied to the payment of our bills for materials, we can't properly ask any preference over the loan man. We can't eat our cake and have it too. If we get the money advanced on the building loan for the material put on the job, it is only fair that the building loan man should be ahead of us, but we should work out a system whereby we are absolutely sure that the money that is advanced on the building loan will be applied to the payment of our bills, and we should work out a system where, instead of our coming in third or fourth with the building loan man and the lot man ahead of us, the lot man should be relegated to our position, and we step forward into his. It is not a difficult proposition. It simply requires a little common sense, and a little cooperation, and I will point out to you how it can be done.

The most striking features of the plan in contemplation are:

1st. Its extreme simplicity—so simple that the wonder is it has not been adopted long ago; and,

2nd. That while it involves a combination of all the dealers in building materials, it leaves every dealer free to make his own prices, his own terms, and to develop his business in his own way; does not conflict with the laws against combination in restraint of trade, and puts on the dealer one restriction only—that he shall not be permitted to deliver material on an operation that is not a safe business risk.

The Plan Proposed Is as Follows:

That all dealers in building materials in the City of New York shall combine in a Credit Association, each member binding himself under a heavy penalty not to deliver material to any operation until the credit bureau of the association shall first authorize him to do so.

Every contract for material to provide that it shall not become effective until the credit standing, not only of the builder, but of that particular operation, shall have been approved by the credit bureau of the association.

The credit bureau to be the executive authority of the association, in charge of a man thoroughly familiar with all the peculiar conditions of the building material trade, well versed himself in the legal aspects of the matters with which he has to deal, and assisted by legal counsel, selected likewise with reference to experience and qualifications in this particular class of business.

Every member of the association to furnish at once to the credit bureau a list of all his customers for the last five years, with a statement of the members' experience with each customer, and his best judgment as to the customer's actual financial resources, this information to be tabulated at headquarters and reduced to such form that any builder's record for the last five years can be quickly and completely traced. This information to be held in strict confidence by the credit bureau, which, in all cases where credit is refused, will announce its decision without detailing its reasons, and without making known or giving any intimation of the source of its information.

An advisory board to be made up of representatives from the different lines of building materials, one from each of the leading branches of the trade, to meet weekly at headquarters, to consult with and advise the credit bureau.

The System Will Operate as Follows:

When an initial order is received or a contract closed, the dealer will apply to the credit bureau for permission to deliver material. With the record at hand of every dealer on every operation he has been connected with during the last five years, either as an individual or through a construction company, and the collective judgment of the members who have dealt with him in respect to his actual financial resources—

Builders whose record is clear and whose financial responsibility is beyond question, can be approved without delay.

Builders whose record is bad can be summarily retired from business, or can be required to make restitution to members of the association whom they have robbed, furnish satisfactory security for material to be delivered to the operation in question, and permitted to continue operations on probation and under the close surveillance of the credit bureau.

Builders whose standing and responsibility are so exceptionally good as to entitle them to such preference, can be put on a special credit list, and authority given to sell to them without reference to the credit bureau until notified to the contrary, or for a stated period, say for the calendar year.

In all cases other than the exceptionally good and the thoroughly bad, the man who applies for credit will be required to furnish a written and signed financial statement to the credit bureau, to back it up by satisfactory evidence, and to furnish at his own expense a title company's search showing just what encumbrances are on the property and how they are held. Excepting in special cases where his standing may render it unnecessary, the builder will be required to execute to the association a mortgage to secure the claims of its members, and the land shark who under the present system holds a mortgage into which his unproductive and tax eating lots have been converted at prices usually much higher than they are worth, and who is always in position to clean out the material men when they have delivered enough material on the job to make it profitable for him to do so, **will be required to subordinate his mortgage** to the mortgage taken by the association. Where the circumstances render it expedient the building loan man who gets a big bonus for his money will be required to assume responsibility for the payment of all claims for material. In some states material men are accorded this protection by law. As a general rule, however, the mortgage held by the association will put it in position to control the distribution of the money as it is advanced on the building loan, and to see that the claims of its members are paid. Under the present system the material man takes what is left when the land hawk and the loan hawk have picked the bones dry. **Under the new system the material man will take his first.**

Where uncompleted buildings have passed into the hands of the mortgagee in consummation of a scheme to rob the material men, that particular operation can be held up until restitution is made.

Trade associations generally find it difficult or impossible to enforce the agreements on which they are based, because such agreements are usually for the purpose of regulating prices and controlling competition, are necessarily secret, are generally in conflict with the laws against combinations in restraint of trade, and can be broken by the parties to them with very little danger of detection, for the favored customer can always be depended on to stand in with the dealer who violates his agreement by making a special price.

The agreement upon which it is proposed to base this credit association, however, will almost enforce itself. No dealer can violate it without being caught, will have to pay the penalty for his violation, and with the association's red flag up on the operation to warn him that it is unsafe, he would hardly venture to risk losing his material even though he could do so without detection.

What would be the attitude of the builders? While this should be a matter of secondary consideration to the dealers, it is worth consideration, nevertheless, as affecting the feasibility and the practical working of the system. It goes without saying that dishonest and irresponsible builders will be opposed to it, but it is as much to the interest of honest and competent and responsible builders as it is to the interest of the dealers themselves that these scalawags be driven out of the business. Honest builders must now compete with cheap construction, with buildings that are constructed of material and labor never paid for, and with an overproduction of buildings due to the ease with which building operations are now undertaken and carried on.

(To be continued.)

"Domestic Engineering" Cartoon on "Evils Besetting the Plumbing Trade".—LXVI

The Same Old Crowd is Still Waiting for Him Around the Corner

If you want to possess a specimen proof of this or any other of our cartoons, let us have your request at once. We have many applications for our cartoons for framing and want to take good care of all demands made.

Laundry Fixtures—II

Porcelain Enameled Iron and Porcelain Laundry Tubs

By Henry D. McCormack, C. E.

Iron Laundry Tubs.

A laundry tray to meet the sanitary requirements must be of a non-absorbent material that will not easily corrode and that can be easily cleaned after use. It should be white or some light color so dirt will show on its surface. It should be smooth, have no sharp edges, and preferably should have no sharp corners inside. A white tub reflects the light upon the work, thus allowing a better inspection of it by the laundress. A smooth surface admits of no injury to the workers' hands or to the materials in the tub, which might suffer in a less perfect tray that is liable to roughness from the action of the water or that has a naturally rough surface. All these qualities are possessed by porcelain enameled laundry tub, which combine great strength, medium lightness, with a surface like glass and corners and angles where dirt cannot lodge. Outside there are no crevices where vermin can lodge, or where dirt can accumulate. The only objection to porcelain enameled tubs lies in the fact that if the enamel ever becomes chipped off, exposing the iron body, the rust formed by the iron may discolor the water and spoil it for washing purposes. As porcelain enameled tubs are now made, however, there is little or no danger of the enamel chipping, so that the objection to their use for this reason is more fancied than real, and their advantages more than offset their fancied disadvantages.

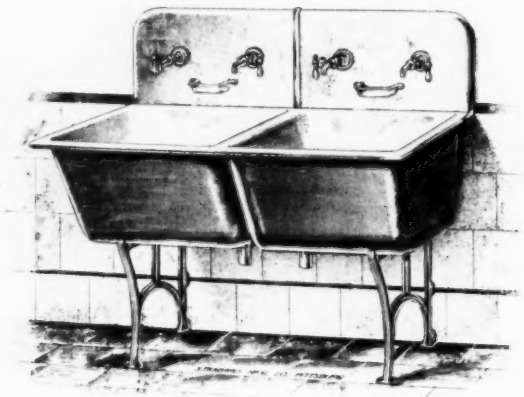


Fig. 3. Porcelain-Enameled Tub.

Porcelain enameled tubs are made with flat rims, with roll rims, and with roll rims and backs. A set of two porcelain enameled tubs made in one piece, with 12-inch porcelain enameled backs, is shown in Fig. 3. Where the different sections of this set of tubs unite they are joined by means of a brass band, which has bolts and lugs for attaching a wringer holder. The supply cocks to this set of tubs pass through the backs and are thus out of the way, where clothes cannot be caught on them and torn, as often happens in laundry tubs with the laundry cocks inside. Nickel-plated brass soap cups are also part of this combination.

Covers are not used with this style of tub, which are designed to be perfectly open and free from woodwork. The high back is another sanitary feature, as the use of same prevents water from being splashed on the walls, thus both wetting and soiling them.

The pedestal standards on which the tubs are supported are simple, smooth, easy to clean, have no embossed parts to catch dirt, and are made sufficiently strong and of such design that, when attached to tub and floor, the wash tray is firmly supported laterally as well as upright. A feature of porcelain enameled ware which commends them to many is the perfect uniformity of size and the exactness of their lines. They are never warped or twisted, and not shrinking perceptibly in their manufacture can be made interchangeable.

A full set of laundry trays consists of three tubs, and in porcelain enameled, also in earthenware wash trays, one of the tubs has a corrugated front surface to use instead of a washboard. The dimensions of porcelain enameled tubs can be found in the following table:

TABLE III.

Dimension of Porcelain Enameled Laundry Trays.

	Width inside.	Width outside.	Length inside.	Length outside.	Height top of rim.	Depth inside.
One section ...	21¾	27	23	28	31½	14¼
Two sections...	21¾	27	23	56	31½	14¼
Three sections..	21¾	27	23	83	31½	14¼

Porcelain Laundry Trays.

The porcelain, or all-earthenware, laundry tray is necessarily very heavy and expensive, but its beauty and perfection do not admit of criticism. The advantages of the earthenware tub are many. It shares with the enameled tray the quality of whiteness. The white tub reflects the light upon the work, allowing a better inspection of it by the laundress. Its perfect smoothness admits of no injury to the worker's hands or to the materials in the tub, which might suffer in a less perfect tray that is liable to roughness from the action of water or chipping or pitting from any cause. Porcelain tubs possess the additional advantage that under no condition can they stain clothes from rust, but, on the other hand, should the enamel become chipped from the surface of

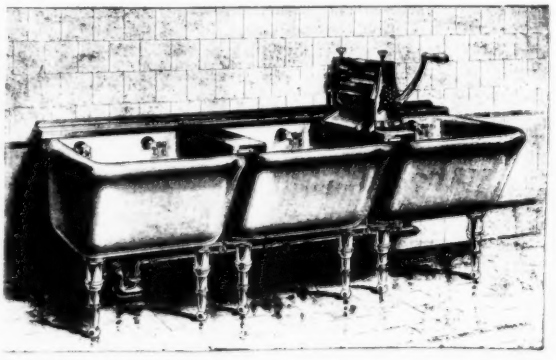


Fig. 4. Set of 3 Porcelain Laundry-Trays.

porcelain tubs, the coarse, porous "biscuit" underlying the enamel and which is as absorbent as a brick, will become saturated with water and after a time become foul. The cheaper quality of earthenware is open to further objections—they are badly warped and twisted in drying and firing, besides being liable to craze. Notwithstanding these disadvantages, however, porcelain tubs are of the best. They are very durable and are easily kept clean. They have rounded corners and angles, which prevent the accumulation of dirt. They are provided with strong steel frames and cast iron standards to support them and can be had in such a variety of designs and prices as to be within the reach of all. Porcelain tubs are made in two general styles, flat rims and roll rims, and in three qualities known respectively as A, B and C. A quality tubs are the most nearly perfect and contain no visible flaws or defects. The second quality, B, have little discolorations, spots, slight fire checks or are slightly warped in burning, but in all other respects are as good from a sanitary standpoint as are the class A tubs. Usually the imperfections in class B tubs are so slight that they would escape the notice of a casual observer. As class B tubs are practically as good as class A tubs, no reason exists why they should not be used, in preference to the best class, where cost is a consideration, and the owner saved the difference in cost. Class C tubs possess more obvious imperfections than class B tubs, but even here the imperfections never amount to defects, but are simply due to the process of manufacture. In manufacturing wares from clay, so many different things might occur between the mixing of the clay and the final withdrawal from the kiln that a certain percentage of each firing is bound to be imperfect. A little spot not sufficiently covered when applying the glaze, a brass filing, iron chip or other metal mixed with the clay and embedded near the surface, a draft when in the kiln, improper firing, too rapid cooling, not sufficient temperature in the kiln, improper mixture—these are all contributing causes which operate to produce imperfect tubs, which, while they cheapen the cost of the class B and C ware, do not, as a rule, affect their sanitary properties.

In addition to what is known as porcelain ware, which is white, laundry trays are made of brown glazed earthenware, also of a light straw colored earthenware known as colonial laundry tubs. These latter tubs, that is, the colonial and brown colored earthenware, possess all the advantages of porcelain tubs, with the single exception of whiteness, and are subject to all the imperfections. Like porcelain tubs, they are made in flat rim style, also in roll rim, and the manner of supporting and connecting the three grades of tubs is similar, so that what is said of porcelain tubs will apply equally to colonial and brown earthenware tubs.

A set of three porcelain laundry trays is shown in Fig. 4. These trays are of roll rim pattern, with a wringer base covering the space between the tubs. The tubs are supported on iron frames, which are secured to the wall behind by means of expansion bolts or lag screws, and rest in front on substantial cast iron legs. The top part of the legs are provided with tenons, which fit in mortises in the tubs, thus preventing them from being shifted sidewise on the iron frame. This method of supporting the tubs is independent of the pipe connections, as it should be, and at the same time provides a firm bearing for the tubs, so they cannot be displaced. Porcelain laundry tubs are made without overflow openings, which, when wanted, must be specified in the order, and unless some stock sizes are on hand, about six weeks are required to deliver them in. In the back part of the trays shown in the illustration cock holes are provided for the laundry tray cocks. These openings are in all stock tubs, which will be so delivered unless otherwise ordered.

A MUCH USED DRINKING FOUNTAIN IN MINNEAPOLIS.

The accompanying illustration shows one of the most popular drinking fountains in the City of Minneapolis. It was erected by the Palace Clothing House outside its

A Much Appreciated Drinking Fountain in Minneapolis.

place of business at the corner of Nicollet Avenue and Fourth Street, South. Quenching the thirst of thousands every day, it is not only a good advertisement but a great aid to sanitation.

SANITARY DRINKING FOUNTAINS FOR HORSES.

Now it is the "common drinking cup" for horses that is a menace and must be done away with. An investigation by the bureau of municipal research in New York City shows that of the 9,600 horses that died in Manhattan last year from glanders and other communicable diseases, a large proportion got the deadly germs from the common watering trough. It is the universal opinion of those interested in the problem that all troughs should be abolished. It is believed that the New York health department will forbid the further erection of watering troughs of any descriptions, and that in future their place will be supplied by draw hydrants.

Cedar Falls, Ia.—A new plumbing establishment will be opened on College Hill by Chris Ulrich, the well known master plumber.

Thurston, O.—The board of education has awarded the contract for the heating and ventilating apparatus for the Thurston School to the Columbus Heating and Ventilating Co.

Washington, D. C.—The Biggs Heating Co., 917 H Street, Northwest, has admitted James Cunningham into membership in the firm. He will superintend the plumbing end of the business. Mr. Cunningham has been away from Washington for about a year, but prior to that time was engaged as a master plumber in the National Capital for some thirty years.

Letters From Our Readers

FACTS ABOUT SEWER GAS.

Editor "Domestic Engineering": In your issue of July 13, I notice with pleasure an article entitled, "Facts About Sewer Gas," by Thos. J. Claffy. The facts as set forth in that article I know to be absolutely correct, as I have a report of City Chemist Cross, of Kansas City, Mo., on tests of the sewage matter running into and out of a septic tank which shows the bacterial germs to be as high as five million to the cubic centimeter at the outlet of the pipe on the inside of the chamber, and the outlet running into the open air. I agree with the writer of that article, after years of experience in repairing and cleaning sewers, that there is no such thing as pure air in sewers and that sewer gas does cause just such effects as he mentions.

Milwaukee, Wis. W. J. Stevenson.

MAINTAINS THAT THE MANUFACTURER, AND NOT THE PLUMBER OR JOBBER, SHOULD GUARANTEE THE GOODS HE MAKES.

Editor "Domsetic Engineering:"—In an article in a recent number of your publication by J. J. Crosgrove, I note, with particular interest, the paragraph in which the writer states that he has always believed that plumbers should not be called upon to guarantee other people's unguaranteed goods. This is, indeed, a most interesting statement for with present modern business methods, it is absolutely unnecessary for any plumber or any jobber to guarantee any goods which he handles.

In every line, there is some manufacturer who guarantees his goods to be absolutely perfect. It is true that these goods sometimes cost a little more than unguaranteed fixtures, but it is equally true that in the end they always cost the plumber, the jobber, the consumer and the architect less. For when the manufacturer feels upon his own shoulders the responsibility of this guarantee, you may rest assured that goods are produced in his plant with the greatest possible care and defects are reduced to a minimum.

To use our own case as an example. When we started to absolutely guarantee our goods twelve years ago, our kind-hearted competitors predicted that we were taking a step in the direction of business-ruin, claiming that people would take advantage of this, that the consumer would try to get a faucet to replace a worn-out faucet, that if a journeyman-plumber made a mistake in installing work, the goods would come back to us, and so on, through endless hypothetical cases. We have, however, found that the greater proportion of humanity is honest. It is true that in a few isolated cases, we have been "worked," but it is also true that we have not received one-fourth of the number of complaints which we anticipated. Why? Simply because we know that we are responsible for every piece of defective work, and our shop-force has been trained and educated to this fact, so that our testing and inspecting departments work with greater care than ever before, rejecting articles which, in times past, had been passed as perfect.

Now, then, the manufacturing force seeing so many goods rejected naturally worked with greater care, and the result is that today after this system has been in operation for more than fifteen years and the effects of it thoroughly absorbed by the minds of all of our men, we have less defective goods in our plant than ever before. Nevertheless, our testers and inspectors have not relaxed their vigilance, and today, while we are doing almost ten times as much business per year as we did when we first inaugurated the guarantee, our claims for defects are less in actual dollars and cents.

In conclusion, we wish to state that there certainly is no reason for any plumber or jobber to guarantee any goods. If he does so, he is buying an inferior line and at a greater expense to himself than if he were buying the best goods guaranteed from the ground up.

Very truly yours,

Cleveland, O. E. L. Strauss.

AS AN OLD-TIME PLUMBER SEES IT.

An old-time plumber offers the following comments upon conditions as he sees them:

"The jobber who first sold a low-down closet combination for $8.50 should have had that closet broken on his head. Such jobbers should remember the day when they paid $14.50 for a No. 4½ combination cock, and $42 for an enameled tub. This is typical of the way some jobbers do business—selling on the basis of one and two per cent profit. These goods which are known throughout the country as "thirty day fall apart fixtures" injure the reputation of any and all plumbers who install them. How long can such conditions prevail? Some jobbers used to have an old war cry to the effect that the plumber has no brains and is not a business man; but, have these same jobbers shown superior business intelligence during the last ten years in degenerating the trade by greedy sales?"

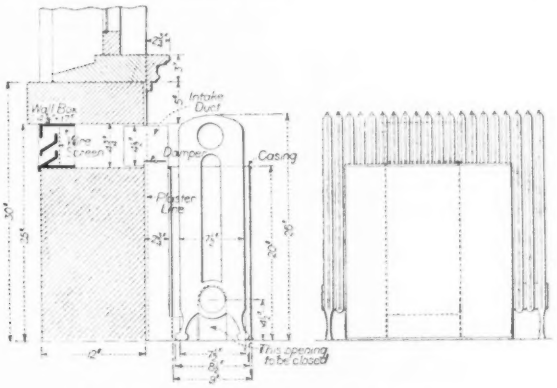
HOW A SICK GREENHOUSE HEATING PLANT WAS CURED.

The Watson Specialty Co., of Terre Haute, Ind., reports most gratifying success with the Watson "Masterpiece" generator for hot water heating plants. The following incident is cited as an example of what this generator will do under extraordinary and stubborn conditions. Last winter during one of the extremely cold snaps, a steam fitter was called upon to look over a green house plant owned by Dr. Ball, of Prairieton, Ind. The owner was up against a proposition that meant the loss of thousands of dollars to him. His houses were heated with a hot water plant—that is, the plant only partially heated them. It was impossible, no matter how much firing was done, to heat the building to the required temperature, and besides the heating plant, he also had three stoves in service as well. The boiler was of the fire box type, and of ample size to carry twice the amount of radiation that was on it. The roof over the boiler was extremely low, and the expansion tank was only two feet above the boiler, and the hard firing that was required kept the water going out through the expansion tank. This meant a waste of water and of fuel, as cold water had to replace the water wasted. The fitter installed a Watson generator, made especially to carry fifteen pounds pressure, right up against the expansion tank. This pressure allowed him to carry the water to a temperature of 250 degrees, whereas before it had been impossible to get the water above the boiling point at the boiler. The results obtained by the generator saved overhauling and adding to the plant, to say nothing of the loss the owner would have sustained in case of a shut-down.

Ventilation of a Dispensary Building*

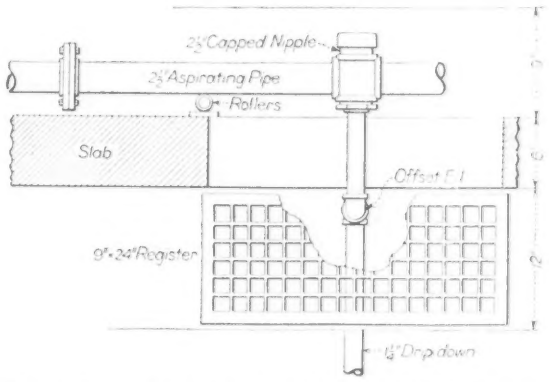
By A. M. Feldman

The subject of this paper is the ventilation of a new dispensary building attached to the Lebanon Hospital, New York City. Only one story and basement have been built, but provision has been made for five more stories. The first story contains a main corridor running the full length of the building, with various clinical rooms on both sides. The corridor is intended to serve as a waiting room for patients, and the number of people congregating there at one time is therefore considerable. The author has accordingly concentrated his efforts on the ventilation of the corridor.



Details of the Direct Indicator Radiator Setting.

The scheme, as will be seen from the accompanying plan, is to exhaust the air from the corridor. For the admission of fresh air all the radiators in the clinical rooms are arranged as direct-indirect radiators, having fresh-air inlets through openings in walls under the windows, with special galvanized iron casings over the radiators arranged so that they can be lifted to get at the radiators for cleaning. Only a few sections of each radiator are enclosed. To prevent cold air by-passing the radiator, the two sections of the radiator next to the ends of the casing are made with solid legs.

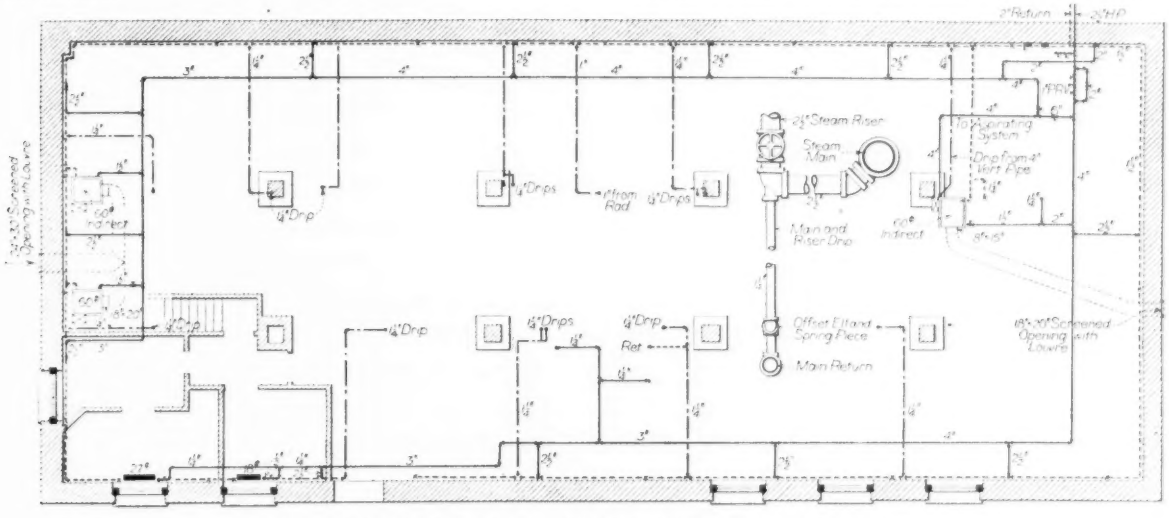


Typical Elevation and Front View of Aspirated Air Exhaust.

Doors are provided with louvers in the bottom panel. Thus the exhausting effect of the system in the corridor is to induce the air flow through the lower panels of the doors from the rooms which are supplied with tempered air by means of the direct-indirect radiators.

To compensate for the heat losses from the end windows of the corridor and to provide an additional supply of fresh air, indirect stacks are provided in the basement. These discharge air through large registers at both ends of the corridor. The ducts and registers are proportioned so that the air is heated not much above 70 degrees F.

Exhaust register boxes under the ceiling of the corridor pierce the concrete ceiling and discharge into a tightly constructed roof space where two 2½-in. steam mains and a 130 sq. ft. circular radiator are provided to furnish heat

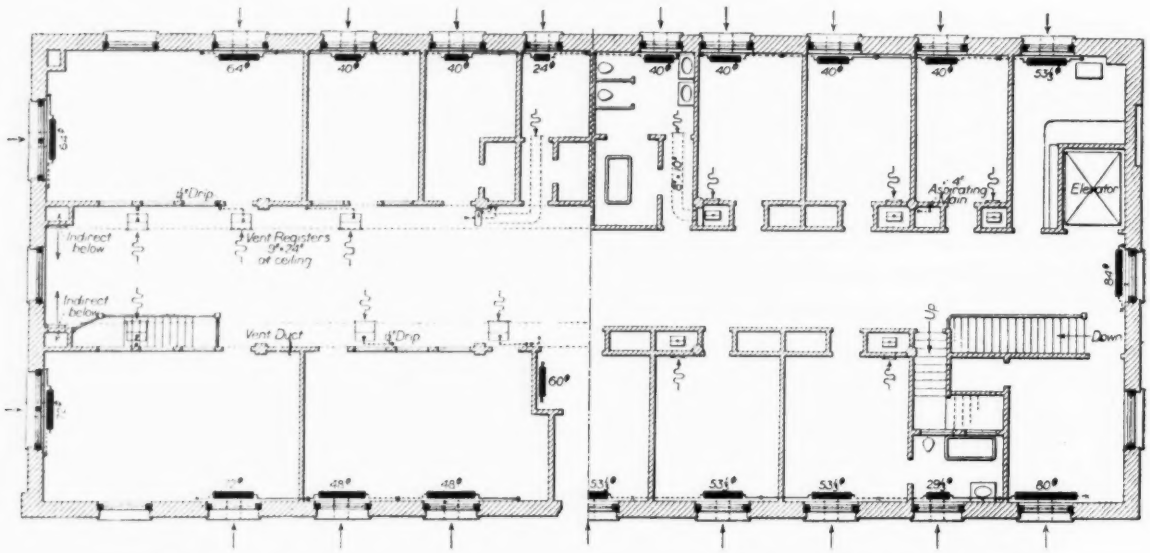


Basement Plan Showing Indirect Radiators and the Steam Piping System.

*Read at the semi-annual meeting of the American Society of Heating and Ventilating Engineers, held at Detroit, Mich., July 11, 12 and 13, 1912.

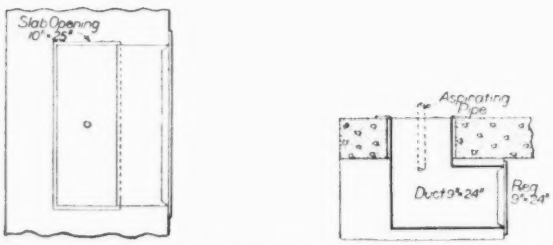
for aspirating purposes. Tees are provided on the pipes for extending aspirating risers through the future vertical ventilating flues required when the upper stories are built. A typical upper story floor is shown to illustrate the idea.

To make the system fool-proof, no dampers were installed in the registers of the exhaust or on the indirects. But to prevent any unnecessary escape of heat after the dispensary closes in the afternoon, one main damper was installed in the ventilator on the roof, operated by means of a chain from the corridor. The damper is made unbalanced so that it will always be kept open unless the chain is pulled down. The system has been in operation the past winter, and has proved a success. The air in all the rooms and main corridor has been described as always sweet. Another feature of the installation is that open windows in any of the rooms give an increased influx of fresh air without drafts with perfect circulation, as the exhaust pulls the air into the corridor.



Half Plan of Ground Floor.

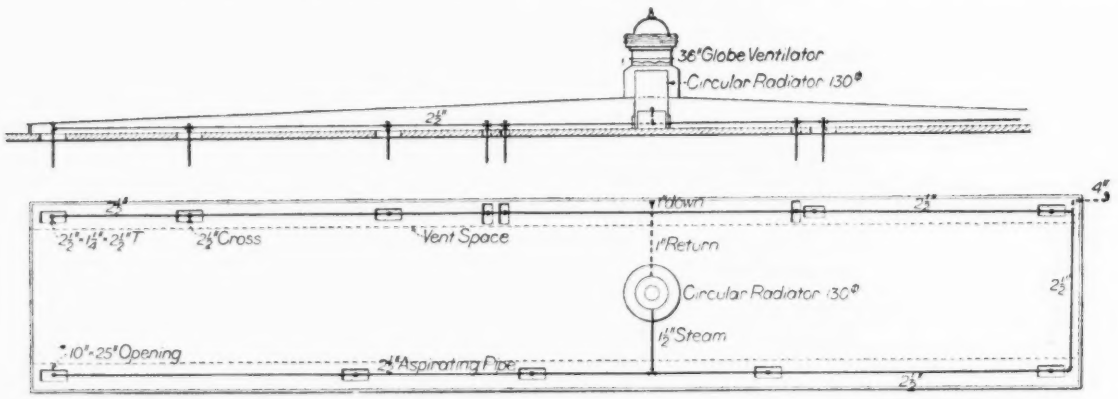
Half Plan of Typical Future Upper Story.



Detail of Vent Flue at Ceiling of Ground Floor.

The heating system has also some novel features. It is a two-pipe installation with a check on the return ends and no air valves on the radiators, but an air valve is provided at the foot of each return riser in the basement. The steam circulation has proved to be perfect with complete air removal and without the nuisance of odors from air valves in the rooms.

High-pressure steam is supplied from the boiler room and reduced at the entrance into the dispensary building. As the latter is located on a lower level than the boiler room the condensation from the heating system is gathered into a non-return trap, which discharges into a return trap. The latter lifts the water to a return tank located in the boiler house and the water is then pumped back to boiler.



Roof Plan and Elevation Showing System of Aspirating Pipes and Methods of Disposing of the Vitiated Air.

THE METAL MARKET

THE IRON MARKET.

The principal features of interest in the pig iron market were the purchases of iron in the Pittsburgh district. The Westinghouse Air Brake Co. took 18,000 tons of foundry iron, the Standard Sanitary Mfg. Co., 13,000 tons of foundry, the Youngstown Sheet & Tube Co., 50,000 tons of Bessemer, 20,000 tons of gray forge. Not only in the Pittsburgh district has the buying been enormous, but in all other iron markets the lagging response to good business, particularly in the foundry trade, has now made itself felt. In and around New York there are a number of small melters inquiring for lots of 500 to 1,000 tons, with an inquiry amounting to 2,500 tons and a possibility of 5,000 tons for a stove founder in New Jersey. A pipe founder in Lynchburg, Va., is in the market for 6,000 tons and the inquiries that have been received by Buffalo furnaces are conservatively estimated at 30,000 tons.

Coupled with this has been enormous buying of steel by the railways, fully 200,000 tons of rails having been purchased for 1913 delivery, mostly Western railroads, and in addition some rails for delivery in November and December of this year. The inquiry for equipment is also large, the New York Central having ordered 50 locomotives from the American Locomotive Co., and inquiring for 40 more for the Lake Shore, while the Grand Trunk has purchased 2,000 cars, the Pennsylvania and the Pennsylvania & Lake Erie each 1,000, the Wabash, 1,200 and 100 low body cars have been bought for the Brooklyn Rapid Transit Co. The largest tangible inquiry includes 5,000 cars for the New York Central, 4,000 for Harriman Lines, while there is a rumor that the Pennsylvania will shortly be in the market for 10,000 cars.

The production of pig iron during July fell off compared with June, due largely to the hot weather. The total make was 2,410,000 tons. This is larger than the corresponding month last year, and in fact in any other July in the history of the iron trade. Coupled with this large production there was a moderate decrease in stocks and an advance of about 25c per ton in prices of all grades.

Quotations are as follows:

No. 1 Northern foundry, New York	$16.00 to $16.50
No. 2 X Northern foundry, New York	15.75 to 16.00
No. 2 Southern foundry, Birmingham	12.00
No. 2 Northern foundry, Chicago	15.00
No. 2 Southern foundry, Cincinnati	14.75 to 15.00

A GAIN IN COPPER STOCKS.

There was a gain in the production of copper nearly 17,000,000 lbs., also a gain in exports and a further increase in domestic consumption. The shipments of copper, however, were not enough to offset the gain in production and a moderate increase in stocks resulted. This is by no means alarming, and the copper producers look on the situation complacently believing that consumption will soon overtake production again and that a fair surplus is much better for the copper industry, producers and consumers alike, than running too close to bare requirements from day to day. Prices have fluctuated a little, the present quotation being 17½c from second-hand, but the leading producers of Lake copper are asking 17¾c. The president of the Amalgamated Copper Co. recently returned from a two months' trip to Europe and was very enthusiastic over the entire situation. While prevailing prices are high, it must be remembered that for several years there have been very low prices, with practically no incentive to new developments.

LEAD.

The American Smelting & Refining Co., the largest producer of lead, reduced its price, for 50 ton lots 25 cents per 100 pounds, making the new price in New York 4.50 cents per pound.

THE MARKET IN OLD METAL.

Dealers' buying prices in New York are:

Light copper	$12.75 to	13.00
Strictly crucible copper	14.75	14.87½
Uncrucibled hy. copper	14.00	14.25
Uncrucibled copper wire	14.25	14.50
No. 1 machine composition	11.00	11.50
No. 1 brass turnings	8.00	8.25
New brass clippings	10.00	10.50
No. 1 composition turnings	10.50	11.00
Cocks and faucets	9.50	9.75
Light brass	7.00	7.25
Heavy brass	8.50	9.00
Heavy lead	3.85	3.90
Tea lead	3.50	3.75
Scrap zinc	5.00	5.12½
No. 1 pewter	29.50	31.00
No. 2 pewter	8.00	10.00
Close cut solder joints	8.25	8.50
Block tin pipe	39.50	40.50
New aluminum scrap	16.00	17.00
Old aluminum scrap	14.00	15.00

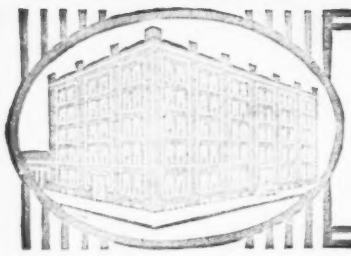
BUSINESS CHANGES.

Enid, Okla.—H. N. Wixon has purchased the establishment formerly owned by the Oklahoma Plumbing Co., 124 E. Randolph Street. Extensive improvements are being made to the interior of the building and a large stock of hot water heating apparatus and plumbing supplies and fixtures will be added. The business will be managed by N. O. Kline.

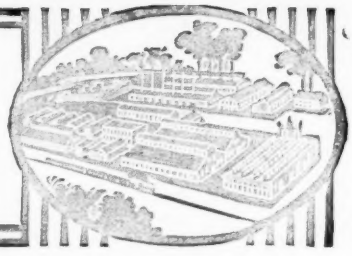
Crawford, Neb.—Chas. Davis, of Pender, Neb., a man of over twenty years successful experience in the plumbing business, will take a partnership interest in R. N. Hamilton & Co.'s plumbing and tinning business of this city.

SYRACUSE, N. Y., MASTER PLUMBERS GO ON ANNUAL PILGRIMAGE.

The Syracuse Association of Master Plumbers, following its usual annual custom, acted as host on July 31st. Each year one day is set aside for the pleasure of the members' wives and children and as on previous occasions, they were taken to beautiful Lake Owasco, near Auburn. A pleasure park at the lake offered additional diversion, and made the occasion particularly delightful. The master plumbers of Auburn were present as invited guests, and T. F. Donovan, as chairman of the committee on arrangements, certainly outdid himself this year as a "fixer."



News of Interest Among the Wholesalers and Manufacturers



WILL MANUFACTURE CLOSET SEATS.

The Abestile Co., of Rochester, N. Y., has been incorporated with a capital of $50,000, to manufacture closet seats. The incorporators are: Walter Ball, F. M. Hanley and L. C. Lorish, all of Rochester, N. Y.

WILL MANUFACTURE HOT WATER HEATERS.

The Vesta Manufacturing Co., of Rutherford, N. J., has been incorporated with a capital of $10,000, to manufacture hot water heaters. The incorporators are Edward A. Brown, Samuel Cohen and Samuel Ginsberg.

WILL MANUFACTURE PLUMBING SPECIALTIES.

The Hall Automatic Coupler Co., of Buffalo, N. Y., has been incorporated with a capital of $250,000, to manufacture plumbing specialties. The incorporators are: L. M. Hall, Sardinia, N. Y.; E. S. Hall, L. Shultes and J. W. Blackman, all of Buffalo, N. Y.

WILL MANUFACTURE PLUMBING APPLIANCES.

The American Accessories Co., of Jersey City, N. J., has been incorporated with a capital of $25,000, to manufacture metal and rubber plumbing appliances. The incorporators are: J. F. Moran and A. Moran, both of Jersey City, and G. W. Hochsprung, of Brooklyn, N. Y.

WILL MANUFACTURE PLUMBING SPECIALTIES.

The Sink Overflow Co., 10 East Lexington Street, Baltimore, Md., has been incorporated with a capital of $20,000, to manufacture plumbing specialties. The officers of the company are: Everett Moore, president; Rufus W. Applegarth, treasurer; Charles T. Reifsnider, secretary.

WILL MAKE PLUMBERS' SUPPLIES AND TOOLS.

The Portico Fitting & Supply Co., of New York City, has been incorporated with a capital of $100,000, to manufacture plumbers' supplies and tools. The incorporators are: Herbert H. Ramsey, 175 East 48th Street, and Robert D. Hanna, 71 Broadway, both of New York City, and A. E. Drew, of Bordentown, N. J.

HAVE INCREASED QUARTERS AND INCREASED BUSINESS.

Fairbanks, Morse & Co., who for the last month or so have been occupying much larger and more suitable quarters on Mission Street, San Francisco, Cal., than their old establishment on First Street, in that city, report the demand for small gas engines continuing to increase steadily. The demand is greatest in the country where electric power is not so readily available and where it is usually cheaper to use gasoline. The country residents are demanding all the modern improvements and in all the best class of country homes vacuum cleaning, ventilating, and the best heating systems are installed. There is also a steady call for gas engines for domestic water-supplies and for use on dairy farms.

PERSONAL MENTION.

F. C. LaFleur, who has handled the central western territory for the Potteries Selling Co., of Trenton, N. J., since Nov. 1, 1911, was calling on the Chicago trade this week.

* * *

R. L. Parsons has accepted a position as traveling representative for the Hoffman Heater Co., Lorain, O. He will make his headquarters at the Exhibition Building, Indianapolis, Ind., and he will call on the trade in Indiana and Illinois.

* * *

S. S. Paterson has been appointed traveling representative for the Pittsburg Water Heater Co., of Pittsburg, Pa. Mr. Paterson will cover Northern Illinois, Wisconsin and Minnesota.

THE ANNUAL OUTING OF GOULDS MFG. CO.'S EMPLOYEES.

The second annual outing of the employees of the Goulds Manufacturing Co., of Seneca Falls, N. Y., was held Thursday, August 15th, at the Cayuga Lake Park. An interesting and enjoyable program had been arranged for the event, and twelve hundred employees and their friends were in attendance.

CONTINENTAL RADIATOR & FOUNDRY CO.'S ANNUAL MEETING.

The Continental Radiator & Foundry Co., 1409-1411 Olive Street, St. Louis, Mo., held its annual meeting recently, at which the board of directors re-elected the following officers: L. F. Ostrander, president; Thos. C. Skeen, vice-president; Benjamin G. Crosby, treasurer; John J. Ostrander, secretary. A proposal to increase the capital stock to $200,000 common, and $100,000 7 per cent. cumulative, a total of $300,000, was voted upon favorably.

PLUMBING SUPPLY MANUFACTURERS WILL SHOW THEIR PRODUCTS IN EIGHTEEN STATES.

Plumbing supply manufacturers in the Pittsburgh, Pa., district will soon leave with "show cars" to travel through eighteen states and visiting thirty-six cities, displaying their products to jobbers and users of plumbers' goods. The Pittsburgh Chamber of Commerce, and the Pittsburgh Industrial Development Commission has just an-

nounced the itinerary of this "Made in Pittsburgh" train, which will be composed of solid Pullmans and carrying besides display cars, a large number of persons, some of the manufacturers taking their wives and children with them. The route of the trip is as follows: After traversing Ohio, Indiana, Michigan, Illinois, Wisconsin, Minnesota, Iowa, Missouri, Nebraska and Kansas, the train will enter the southern tier of states at Oklahoma City, Okla., on the morning of September 20. The intinerary from this point follows: September 20, Oklahoma City, Bartlesville, Tulsa; September 21, Ft. Worth, Dallas, Tex.; September 22, Galveston; September 23, Houston; September 24, Beaumont; September 25, Shreveport, La., Little Rock, Ark.; September 26, Memphis, Tenn., Paducah, Ky.; September 27, Nashville, Tenn.; September 28, Louisville, Ky., Cincinnati, O.

HAVE JOINED THE CHAMBER OF COMMERCE OF U. S. A.

The Central Supply Association at Chicago, with 185 members; and the National Pipe and Supplies Association of St. Louis, with 200 members, have now been elected to membership in the Chamber of Commerce of the United States of America. Though the National Chamber was organized as recently as April 22, 1912, more than 77,000 business men of the nation are now affiliated with it through 102 different organizations covering 29 individual states and the Hawaiian Islands.

The detail work of the National Chamber is being carried on at Washington D. C., by the following men: General Secretary, Elliot H. Goodwin, formerly Secretary of the National Civil Service Reform League; Field Secretary, Edward F. Trefz, formerly Advertising Counselor to the Painted Display Advertising Association of the United States; Assistant Secretary, D. A. Skinner, formerly Assistant Chief, Bureau of Manufactures, Department of Commerce and Labor; Chief of Editorial Division and Editor of "The Nation's Business," G. Grosvenor Dawe, formerly Managing Director of the Southern Commercial Congress.

THE STANDARDIZATION OF EXTRA HEAVY SOIL PIPE AND FITTINGS.

Frank S. Hanley, secretary of the National Committee of the Confederated Supply Associations, has just issued the report of the Standardization Committee on Soil Pipe and Fittings, adopted by the National Committee at its meeting in Atlantic City, N. J., July 11, 1912. This committee consisted of D. L. Hamill, Frank D. Keeler and John F. Wolff, and its report in full follows herewith:

"We deem it advisable to use the word 'Naco' on extra heavy pipe and fittings only, at this time. In our opinion the following dimensions and weights should be adopted as a standard for the 'Naco' proposition:

"All pipe and fittings of 2" to 6" diameter must be marked with the manufacturer's name or appropriate initial.

"Inside Diameter: The inside diameter of the barrel of any extra-heavy pipe or fitting or branch thereof shall not be less than 1/8" less than the nominal size of same. Except for the unavoidable irregularities, the full nominal bore must be maintained.

"Wall Thickness: A variation of 1/32" less than the figures below will be permitted, but only when the actual weight is not less than the estimated weight.

"Wall Thickness: Barrel, 1/4"; body of hub, 5/16"; through head of hub, 1/8" thicker than hub; through head at spigot end, 1/8" thicker than spigot.

"Hubs: The depth of extra heavy hubs shall not be less than as follows:

"Size of pipe, 2", 3", 4 to 6"; depth of hub, 2 1/4", 2 1/2", 2 3/4".

"Hub head shall have at its greatest diameter a width as follows: 2", 3", 4 to 6", 5/8", 11/16", 3/4".

"The inside diameter of the hubs shall not be less than: 2", 3", 4", 5", 6", 3 3/16", 4 3/16", 5 3/16", 6 3/16", 7 3/16".

"Spigot: The outside diameter of the spigot head must not exceed 2 7/8" on 2"; 3 7/8" on 3"; 4 7/8" on 4"; 5 7/8" on 5"; and 6 7/8" on 6". The head shall not at its greatest diameter be less width than 9/16" on 2"; 5/8" on 3", and 11/16" on 4", 5" and 6".

"Caulking Room: The spigot end including head of every fitting must be straight without offset or change in direction for at least 4"; on traps this must be at least 5".

"Traps: The Caulking room at spigot end shall not be less than 5". Seal to be not less than 2 1/2"."

JAMES M. STANNARD OPENS CHICAGO OFFICE FOR AMERICAN STEAM PUMP CO.

James M. Stannard, well known to the heating trade through his twenty-three years' association with the Scott Valve Co., of Chicago, as vice-president and general manager, has resigned his active connection with that company to accept the management of the Chicago office of the American Steam Pump Co., of Battle Creek, Mich. This line has been handled for many years through the Scott Valve Co., but the rapid development of the business has made it necessary to have the concentrated efforts of a local sales office in this city. Mr. Stannard has just opened an attractive suite of offices at 1229-21 Monadnock Block.

James M. Stannard, of Chicago.

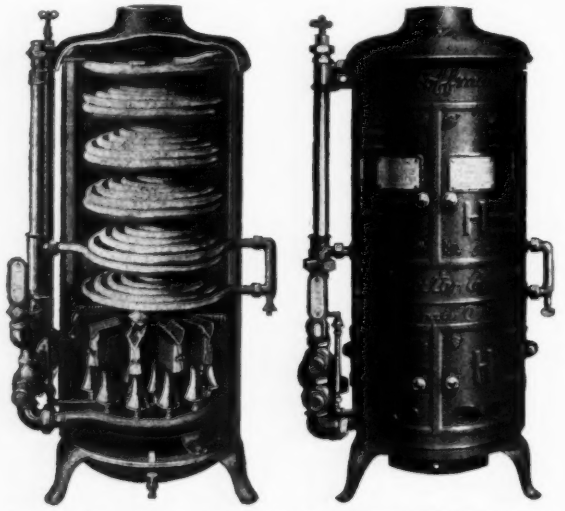
A NOVEL ADVERTISING CAMPAIGN.

The Kewanee Boiler Co., Kewanee, Ill., has just inaugurated a novel advertising campaign in the form of picture postal cards. The first card, of what promises to be a very interesting series of postal cards, has just been mailed to the trade as a reminder that the company is able to fill orders for water storage tanks promptly. A miniature reproduction of this card is shown herewith. The card bears the legend: "Over an Acre of Tabasco Water Storage Tanks." Those who receive these cards are requested to preserve them until they get a complete set. Interested parties who have not yet received this card can obtain it and in due time the entire series upon request to the Kewanee Boiler Co.

An Acre of Water Storage Boilers.

THE "HOFFMAN" IMPROVED GAS WATER HEATER.

The Hoffman Heater Co., Lorain, O., after ten years of successful experience in the manufacture of gas water heaters, claims that the latest improved "Hoffman" instantaneous automatic heater is the last word in heater construction. The accompanying illustrations show an interior and exterior view of this heater. The "Hoffman" method provides steaming hot water day or night, at the turn of the faucet. The heater, connected to the gas and water pipes in the basement, is ready to give service at any time, and is no expense when not in use, except for a small pilot light. It is economical because no more water is heated than is actually required and when the faucet is closed the gas at the main burner is automatically shut off. A guarantee for one year accompanies each heater, with privilege to return same after thirty days' trial, if it does not fulfill all claims made for it. Interested parties can obtain full details by addressing the manufacturers.



Interior and Exterior Views of the Improved "Hoffman" Gas Water Heater.

THE RELIANCE CHIMNEY TOP.

The Reliance patented chimney top recently placed upon the market by the Berger Mfg. Co., of Canton, O., has aroused considerable interest among the manufacturers and dealers. Most tops are not successful for chimneys surrounded by a group of buildings, due to the fact that the wind will be deflected downward by the roofs, enter the top of the chimney at the side of the chimney top and cause annoying down drafts. With the Reliance type this is impossible as the hood extends below the top of the chimney and encompasses it on three sides. Due to careful machining the pivot movement insures positive and instant action, in fact, the hood motion is so easily affected that a breath of air from the lungs of a child will cause it to revolve. The hood design which keeps out the drafts also keeps out the rain, thereby preventing any interference with the operation through rusting of the bearing surfaces. The structure is strong and durable, and made of the materials best adapted for the purpose—materials which will give the utmost limit of service. The top can be used on every type and size of chimney where conditions exist as outlined above, and it is said to give the same good service whether used on home or on factory. The Berger Manufacturing Co. advise us that they will gladly give further particulars to any one interested in chimney tops.

The Reliance Chimney Top.

THE ROYAL DEFLECTOR.

The Davidson Heating & Construction Co. of Hanover, Pa., has placed on the market a new and useful fitting for hot water circulation, and while simple in design, it embodies many features of practical merit.

This device is claimed to be a departure from the usual method of circulation. By its use the ordinary T is converted into a special circulating fitting with advantages of adjustment to meet a feeble or reverse circulation in the branches of a hot water system. This adjustment may be

accomplished while the system is in operation. New radiator connections from existing mains may be made by the use of suitable deflectors tapped into the supply and return.

The device is shown in Fig. 1, while Fig. 2 indicates the combination with a standard T for rising lines and cellar mains. Means are provided on the hub to indicate the position of the deflecting end. These deflectors are

Fig. 1.

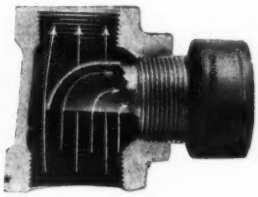


Fig. 2.

The "Royal" Deflector.

made from grey iron in 4 sizes, namely: ¾", 1", 1¼" and 1½". Heating engineers and contractors should be interested in this new device, and they can obtain full details by writing the above-named company.

ADVANCED IDEAS ON DRINKING FOUNTAIN INSTALLATONS.

The Murdock Mfg. & Supply Co., Cincinnati, O., manufacturers of the Murdock "Bubble-Font", reports some unique and desirable methods used in installing the "Bubble-Font." Some months ago a progressive plumber in installing a "Bubble-Font" for the town of West Alexandria, O., used a little ingenuity in order to chill the water. He led the city water, which is ordinarily warm during the summer, through a block-tin coil immersed in the water of a deep well and then attached the supply to the supply inlet at the bottom of the "Bubble-Font." The consequence is that the public can get its regular city water almost ice cold to drink, and everybody is delighted. Another plumber has installed one in front of his store and chills the city water through a tin pipe coil in a refrigerator in his basement. He claims it is the greatest advertisement he ever thought of and that the public is making "a beaten path to his door." As an advertising medium, plumbers could not do better than to install a drinking fountain, a live, working fixture, in front of their establishments, as it is right in line with their business.

The "Bubble Font."

The manufacturers claim that the Murdock "Bubble-Font" is especially adapted for use in public places; that it is anti-freezing, self-closing, non-pollutable and sanitary, because the integral trap at the bottom prevents sewer gases from arising to the drinking point. Readers of "Domestic Engineering" who are not familiar with this new drinking fountain can procure detailed information by writing the Murdock Mfg. & Supply Co.

AN INTERESTING CALENDAR.

"When Casey's At The Bat" is the title of an illustration reproduced herewith, used by the Great Western Pottery Co., Kokomo, Ind., and Tiffin, O., on its August calendar. This company issues an attractive calendar each month and mails them to the trade as a reminder of its vitreous china sanitary ware. On the back of the August

Great Western Pottery Co's. Calendar for August.

issue is illustrated the "Alhambra" vitreous china drinking fountain with vitreous china bubbling cup. This particular design, for all round excellence, is said to be the finest pedestal drinking fountain yet made. It is particularly adapted for both indoor and outdoor purposes. Anyone desiring a copy of this calendar to hang in the office will be supplied upon request to the Great Western Pottery Co.

IS LOCATED IN DAYTON, OHIO.

The Vaile-Kimes Co. is located at 35 South St. Clair Street, Dayton, O., and not in Toledo, as was erroneously stated in this column last week.

Mean Insect.

An old German farmer in Kansas by industry and frugality acquired a rather large property and at the same time a ponderous physique. He sold his farm and stock and bought a neat place in the outskirts of the town. Not wishing to be entirely idle, he cultivated a garden patch in which he took great pride.

One day an adventurous calf found its way into the garden through a hole in the fence. The old man ran him around the garden several times, but Mr. Calf could not or would not find the hole through which he had entered. At last, out of temper and breath, the man sat down on a bench and, fanning himself with his hat, said:

"Der caluf is der meanest insect vot schumps, dot's vot 'er matter iss!"—Kansas City Star.

News of the Plumbing and Heating Contractors

Reports of the Week from Many Different Cities Show Both Business and Personal Activity in the Trade

NEWS FROM NEW ENGLAND.

Massachusetts.

Gardner.—The Royal Steam Heater Co. was the only bidder for the installation of a steam heating system in the West Broadway school house and has been awarded the contract. The successful bidder for the plumbing of the same building was Edward Reilly. The figures have not been made public, but it is understood that the heating system will cost about $2,000 and the plumbing about $1,000.

Fairhaven.—The E. P. Hirst Co. has the contract for plumbing and heating in the new residence being constructed for A. G. Van Nostrand.

Lenox.—David O'Brien has opened a plumbing establishment in Colonial Hall building.

Fitchburg.—The contract for installing plumbing and heating apparatus in the Wachusett street school building has been awarded to P. J. Hart. The work will be done by day labor, the cost guaranteed not to exceed $1,714. Five bids were submitted.

Lowell.—Desmarais & Bourrett are installing the plumbing and hot water heating system in the Notre Dame de Lourdes rectory; gas piping and plumbing in two cottages for Miss St. Goddard on East Meadow Street and have other similar contracts in hand.

New Bedford.—Contracts for alterations in the plumbing and sanitary arrangements at the Mary B. White school and the Dartmouth street school have been awarded, the former to Jones & Dodge for $2,440 and the latter to Flavien Hamel for $3,071. There were four bidders in each instance, the figures being as follows: Mary B. White school, Jones & Dodge, $2,440; E. P. Hirst, $2,651; Sherman & McQuillan, $2,659; Flavien Hamel, $2,668. Dartmouth street school, Flavien Hamel, $3,071; E. P. Hirst, $3,119; Jones & Dodge, $3,325; Sherman & McQuillan, $3,475.

Clinton.—O'Toole Brothers have been awarded the contract to heat new apartment houses being erected by P. F. Ward, J. C. Jenkins, Russell Bingham and Louis Gagnon, all in Fitchburg, and in private residences being erected by J. E. McGuane and E. S. Barry in Ayer. The same firm also has a contract for heating, plumbing and pneumatic water supply in the new residence of George T. Greenhalge at Pepperell.

Adams.—A modern steam heating plant is to be installed in Taylor's theater on Park street. The contract has been awarded to Walter Pecor. Mr. Pecor has just completed the installation of several bath rooms in the Russell block.

Pittsfield.—At a regular meeting of the board of public works a contract for plumbing in the Read school building was awarded to J. J. Sullivan and a contract for similar work in the Tucket school building to Nolan & Hebert.

Hingham.—New plumbing arrangements are to be installed in the West and Center school buildings. The contract for the former has been placed with Rich & Marble and for the latter with George J. Reis, of East Weymouth.

Pittsfield.—The Robbins, Gamwell Co. has been awarded a contract for heating and ventilating the new Union Square theater building.

Methuen.—Plumbing Inspector John T. Dugdale is actively engaged in a campaign against plumbers and others who do plumbing work without a permit. Several persons have already been haled before the district court on charges preferred by Inspector Dugdale.

Fall River.—The Fall River Master Plumbers' Association opened the month with a banquet at Pottersville Inn. After caring for the wants of the inner man the members passed a pleasant evening in an informal manner.

Sharon.—The school board has awarded the contract for installing a new heating and ventilating system in the grammar school building to Stone & Underhill, of Boston, for $1,685.

New Hampshire.

Salisbury Beach.—The new public comfort station which is being erected at the Beach is nearing completion. It has been connected with the sewer and the plumbing fixtures will be installed in a few days.

Nashua.—Fred T. Buxton has been awarded a contract to install a new steam heating plant in the First Universalist church.

Concord.—St. Anslems' College is planning the erection of a new central heating plant.

Connecticut.

Bridgeport.—G. L. Beitner has the contract for plumbing and furnace heating in a two-family house to be erected on Fairfield avenue for B. F. Perry. The contract for plumbing and heating in the store and tenement building on Jefferson street for F. H. Jacoby has been placed with A. E. Roberts. The W. P. Kirk Co. will do the plumbing and heating in a new residence being erected on Vine street for John H. Schread. J. Reilly, Jr., has the plumbing and heating contract for the large residence of Walter M. Bangs on Russling street. Plumbing and heating in a house which William Moore is to build on Park avenue will be done by Carlson & Benson. The contract for the plumbing and heating in a new two family house on Sherwood street for F. H. Gregory has been awarded to Joseph Mongrain. R. T. Rock will do the plumbing and heating in a new house on William street for J. P. Frisbie. J. L. Lesko has the contract for plumbing in a new two apartment house on Hollister Heights for J. F. Daine. Mr. Lesko also has the contract for plumbing and metal work on a brick store and tenement building on Hallett street for Stephen Lesko. He will shortly move into his new shop at 242 Hallett street.

Bridgeport.—J. A. Coates has opened a plumbing establishment at 267 East Main street. He will do heating and metal work as well as plumbing.

Hartford.—Corporation papers have been issued by the Secretary of State to the Horn-Lowden Co., of New Haven, to do a general plumbing business. The incorporators are Vernon W. Lowden, Lewis N. Horn and Ernest A. Krooner, all of New Haven.

New Canaan.—The Henry Plumbing Co. has the contract for plumbing in the new Silliman building.

Rhode Island.

Providence.—Proposals for the heating and ventilating system for the new science building at the Rhode Island State College of Agriculture and Mechanic Arts have been received and the contract, it is expected, will soon be awarded. Thirteen bids were received but of these only six have been taken under advisement. The six are as follows: Dennis McCarthy, Providence, $6,484; Dexter Engineering Co., Providence, $7,200; C. H. Sanborn, Boston, $7,209; Isaac Coffin Co., Boston, $7,773; William E. Doherty, Providence, $8,789; John H. Johnston Co., Fall River, $7,743.

NEWS FROM PHILADELPHIA.

The recent order from the Bureau of Health requiring all properties having surface drainage and privy wells, to abandon same and connect with the sewer, has made considerable work for the plumbers of this city. New work is rather scarce, but the prospects look encouraging.

The following contracts have been let: J. G. Lowener, 2313 Columbia avenue, has the contract to install drainage systems at 1302-14 Pine street, and 1228-32 Waverly street, for the Pennsylvania Co. He will also do similar work at 402-12 Watt street, for the same company.

W. W. Sutterlay, 503 N. 51st street, will install plumbing at 4821 Ludlow street, for the Quaker City Laundry.

Elwood Bromley, 1531 Sellers street, has been awarded the contract for plumbing in six houses, 5045 to 55 Hawthorne street, for G. Osborne.

Geo. Habgood, 5014 Hawthorne street, has the contract for plumbing at 1221-23 Allengrove street, for C. West & Co.

Rhodes Bros., 930 N. 8th street, will install plumbing in 8 new houses at Fallon and Ludlow streets, for F. C. Michaelson.

R. B. McFarland, 1932 S. 7th street, will introduce the drainage system at 2003-11 S. 7th street, for H. Backman & Co., owners.

Thomas D. Clark, 277 S. 11th street, has been awarded the contract for plumbing in the building at northeast corner James and Fraley streets.

John McCann, 210 W. Dauphin street, will install plumbing in the building on the east side of Carlisle street, at Columbia avenue, for Sisters of Mercy.

Kenneth Wilson, 2853 N. 5th street, will install plumbing in the properties at Bellgrade and Westmoreland streets, northwest corner Fairhill and Cambria streets, southwest corner Salmon and Croyden streets, northwest corner Salmon and Croyden streets, northwest corner Salmon and Eddington streets, eight houses north side of Eddington, west of Salmon street; seven houses west side of Salmon, north of Eddington street; four houses west side of Salmon, north of Croyden street, for J. B. Vanderslice, owner.

Jas. Hallinan, 52nd and Vine street, has the contract for plumbing in two houses east of 60th street, for Samuel Shoemaker.

Baxter Bros., 238 S. 5th street, will install drainage systems at 1330-34 S. Howard street, for Charles Koster.

W. C. Busby, 5324 Oxford pike, has the contract for plumbing in two houses at Claridge and Bleigh streets, for H. F. Hartwig, owner.

R. A. Needham, corner Church and Franklin streets, has been awarded the contract for plumbing in 9 new houses at Gaul street and Indiana avenue, for G. Seiter.

John J. Kelly, 3038 W. York street, will do the plumbing in the new building, corner Fox and Clearfield streets, for Edward Bramigan, owner.

NEWS FROM THE PACIFIC COAST.

San Francisco.

While it was generally surmised that the building activities on the coast were holding up unusually well for the lateness of the season, yet the most sanguine hardly expected to see such a splendid showing in the matter of new building permits as the July record affords. With but one exception every large city on the coast has gone ahead of the previous month, and the difference in the figures for July this year and last year are very marked in the right direction. In July building permits to the total valuation of $2,452,725 were issued in San Francisco, making the largest showing of the year thus far since the banner month of March. These figures constitute an increase of about $400,000 over June, and almost as much over July, 1911. In Los Angeles July is the biggest month on record, and the permits total $3,585,014, or about $100,000 more than June and almost double the amount for July, 1911. Building conditions have been exceptionally active all season in the south. Oakland building permits for July aggregate $1,010,444, almost $300,000 more than for June, 1912, and July, 1911. Seattle shows a slight falling off, her permits for July being $645,325 from June, but this amount is about $100,000 greater than for July a year ago. Portland shows a gain of about $300,000 over June and a gain of over $100,000 over July, 1911. Her last month's permits total $1,494,921. San Diego issued permits in July to the amount of $898,977, as against $669,163 in June, 1912, and $267,250 in July, 1911. Sacramento's July permits amount to a valuation of $286,681, a substantial gain over both June this year and July a year ago.

To give further evidence that business conditions on the coast are radically improving, it may be mentioned that the bank clearings for July show a very large increase over June, and over July of 1911. The clearings in July through San Francisco were $228,229,572, over twenty millions greater than for June, and over thirty millions more than for July, 1911. Most other cities show a proportionate increase.

According to a recent report of the building and grounds department of the Panama-Pacific International Exposition, the preliminary work on the Harbor View site is progressing satisfactorily. No unusual difficulty is noted in the condemnation proceedings and already much has been done in providing for an early start on the sanitary system of the grounds and the landscape layout. The architectural commission has prepared plans for the service building and these are now being figured. The department of mechanical and electrical engineering have their plans almost ready, and the plans for the water supply and fire protection system will soon be completed. Already many states and several foreign nations have chosen sites for their special buildings.

Among the greatest needs of San Francisco are more public drinking fountains and public comfort stations. Health Officer Broderick is stirring himself to procure improvements in this line and this week he asked the Labor Council to indorse resolutions calling upon the Board of Supervisors to install convenience stations and sanitary drinking fountains in public squares, Golden Gate Park and along Ocean Boulevard.

The Board of Public Works has awarded the contract for furnishing the receiving building of the San Francisco Hospital with a heating and ventilating system to the Pacific Fire Extinguisher Co. Amount, $5,376.

The Dexter Electrical Construction Co. has been given the contract to install a vacuum machine, pumps, etc., in the seven-story building at Market, near Seventh Street, owned by J. D. Phelan. Amount of contract, $1,450.

Willard C. Chamberlain, Pacific Coast manager for the Standard Sanitary Manufacturing Co., has just returned from a trip to Los Angeles and Santa Barbara.

H. W. Finch, Pacific Coast manager for the J. M. Kohler Sons Co., reports business in his lines holding up satisfactorily and that the demand for high-class enameled goods is growing steadily.

NEWS FROM NEW YORK STATE.

Auburn, N. Y.—O. J. Hickey has under way the plumbing and heating installation in the National Bank of Auburn building.

Syracuse, N. Y.—E. J. McCarthy, with headquarters on Southwest Street, has got to a point in his career when a citizen must possess at least a million sinkers to engage his services. School Commissioner Colwell qualified along this line and Mr. McCarthy is consequently engaged with the plumbing installation in that illustrious gentleman's mansion on West Genesee Street.

Syracuse, N. Y.—Wm. George & Co. have secured the contract for the plumbing and heating installation in the D. K. E. Chapel House, at Colby College, Hamilton, N. Y.

NEWS FROM WISCONSIN.

Fond du Lac.—Plumbing Inspector J. E. Hennen has prepared an amendment to the city plumbing ordinance, which has been accepted by the ordinance and legislation committee of the common council. The amendment pertains to the reventing of waste pipes by special air pipes leading from fixtures. There are many houses in the city that were roughed for plumbing several years ago and no provisions have been made for reventing sinks or basins. The plumbing ordinance now in force would require considerable unnecessary expense to the owner of such property. The changes to be passed upon by the council are: (a) "No revent necessary for single sinks nor basins in old houses if supplied with an approved form of non-syphon traps." (b) Slop sinks placed ten feet or more from the soil pipes need not be revented." (c) "Where two closets are on one stack, one on the first floor and one on the second floor, the second floor closet need not be revented if placed within two feet of the stack."

Kenosha.—Alderman E. J. Sullivan has recommended to the council that an ordinance be drafted to govern plumbing in the city and force the putting in of sewer stubs at the proper depth.

Milwaukee.—Commissioner of Public Works Simmons has let contracts to the amount of $15,000 for the con-

struction of sewers in various streets. George E. Zimmerman was awarded following contracts: Elm Street, for $3,341.52; Fifteenth Street, for $1,087.68; Hi-Mount Boulevard and North Avenue, for $1,799.27; Fourteenth Street and Finn Street, for $1,900.71; Fifteenth Street, for $773.90; Forty-Ninth Street and North Avenue, for $1,-369.76. Other contracts: Twenty-Sixth Avenue, for $712.80, and Arthur Avenue, for $740.02, to T. Szukalski; North Avenue, for $427.68, to F. H. Nakielski; Island Avenue, for $433.20, to M. Synowitz.

Racine.—The St. Mary's congregation will have a new steam heating plant installed at a cost of 5,000. It will provide heating for both the church and school house located at College Avenue and Eighth Street.

Fond du Lac.—The committee on buildings and grounds of the school board has reported in favor of awarding the plumbing contract, for work to be done in Lincoln school, to the Sanitary Plumbing Co., whose bid of $625 was the lowest submitted.

Racine.—Contracts have been awarded for the construction of a $55,000 Elks' Club house for the Racine Lodge of Elks. The plumbing and heating contracts were awarded to Racine men, John Feiner receiving the plumbing contract and Smollen & Schoenleben, the heating contract.

La Crosse.—The board of public works is contemplating improvements on the municipal water works system. A call has been issued for bids on furnishing material, such as cast iron pipe, specials, fire hydrants and valves, to be furnished f. o. b. La Crosse. Bids will be closed Aug. 29.

CONTRACTS AWARDED.

Albia, Ia.—The contract for the construction of the septic tank was awarded by the city council to the Albia Plumbing Co. for $5,426. The tank is to be located in the west part of town.

Philadelphia, Pa.—Robert Scott Engineering & Construction Co. of this city has secured the contract for the installation of a direct steam heating system at the erecting shop at Baldwin's Locomotive Works at Eddystone, Pa.

Duluth, Minn.—Contract for the plumbing and heating in the Zalk & Josephs building, 513 West Superior Street, has been awarded to the American Heating Co., for $4,500.

Lohrville, Ia.—F. O. Cottong has the contract for installing the heating and plumbing plants in the new residence of Mrs. Fannie Brown.

Fort Wayne, Ind.—Contract to install a new heating plant in the First Presbyterian church, corner of Washington and Clinton streets, has been awarded to McPhail Bros. of this city. Work will begin at once. The boilers will be replaced and the entire heating plant will be overhauled and improved.

Cresson, Pa.—Everetts & Oberdear Co., of Lancaster, Pa., have secured the contract to install the heating plant in the state tuberculosis sanitarium here.

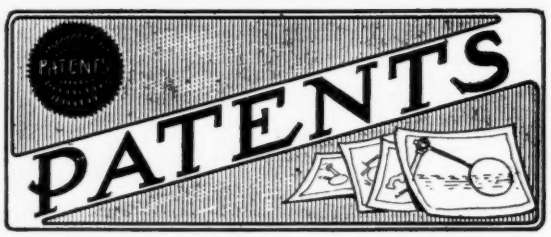
Sterling, Ill.—F. A. Trager of this city has been awarded the contract for the plumbing in the houses being erected by M. T. Mouck in the west end of the city.

Fontanelle, Ia.—Contract for the heating and plumbing in the new and old school buildings at Orient, Ia., has been awarded to L. A. Brink of this city. These amount to nearly $3,000.

Peoria, Ill.—Lucas & Saal have secured the contract for the plumbing work in the court house and repairs to the plumbing in the jail basement.

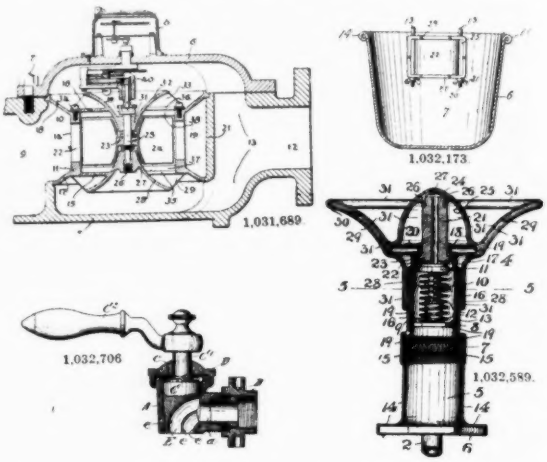
Chicago, Ill.—C. W. Johnson, Inc., is the style of a new heating and ventilating contracting concern, which has just started in business at 644 Washington Boulevard. Those interested in the new venture are C. W. Johnson, president; F. E. Firestein and G. A. Johnson. C. W. Johnson was until recently connected with Robert Gordon's heating business at 736 West Monroe Street.

Walla Walla, Wash.—The G. H. Sutherland Co., located in the Masonic Temple on Alder Street, recently purchased a piece of property with a frontage of 105 feet and a depth of 185 feet, at the intersection of Main and Colville Streets, this city. This company will proceed at once to erect a modern two-story and basement building, and as soon as it is completed, will move its plumbing and heating establishment into the new quarters.



1,031,689. Water-Meter. Horace Chrisman, Edgewood, Pa., assignor to Pittsburg Meter Co., a corporation of Pennsylvania. In a water meter, a wheel casing provided with outlet ports and peripherally disposed inlet ports, a wing wheel located between the outlet ports and conoidal deflectors arranged on opposite sides of said wheel and adjacent to said outlet ports.

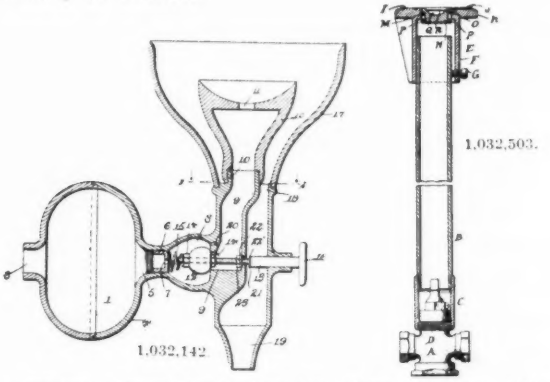
1,032,173. Bath-Tub Head-Rest. Arnold Zukor, New York, N. Y., assignor of one-half to Morris Neuman, New York, N. Y. In a device of the class described, the combination with a base frame having holes extending through the vertical bars thereof, of supporting rods extending through said holes, the upper ends of said rods being shaped in hook form and their lower ends which project beyond the lower face of said frame being screw threaded, nuts meshing with the screw threaded portions of said rods resting against the lower face of said base frame, a tray, a clamping frame in engagemnt with said tray attached to said base frame, and a head block in said tray projecting beyond the edges of said tray and said clamping frame.



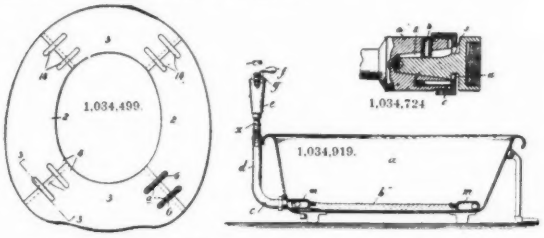
1,032,706. Faucet. Levi L. Rowe, Boston, Mass. In a faucet structure, a casting having an unobstructed horizontal passage circular in cross section, and means for coupling said passage to a pipe, said casting having also a vertical passage therethrough to receive a plug, in combination with a plug located to turn in said vertical passage, said plug having an unobstructed delivery passage through it adapted to register with the unobstructed horizontal passage in said casting and having flat walls, and said plug terminating just below the horizontal passage in said casting whereby its vertical passage will be reduced to a minimum of length and will deliver its stream without swirling.

1,032,589. Drinking-Fountain. George G. Cooke, Newark, N. J. A sanitary drinking fountain of the character set forth comprising a tubular member to which a water pipe is adapted to be attached, a second tubular body connected with said tubular member, said tubular body being formed with a tubular guiding part, a tubular shank movably arranged in said tubular guiding part, said tubular shank having a screw-threaded upper end-portion, a drinking-nozzle provided with a screw-threaded hub-like member screwed upon said screw-threaded upper portion of said shank, and a valve-controlling means in said tubular body adapted to be actuated by the downward movement of said shank and the nozzle, substantially as and for the purposes set forth.

1,032,142. Drinking-Fountain. John E. Johnsen, Chicago, Ill. A device of the class described comprising an inlet chamber; a restricted outlet for said chamber; a valve chamber communicating with said outlet; a discharge passage leading from said valve chamber; a nozzle at the outer terminal of said passage; a valve governing said passage; a cup surrounding said nozzle; a drain passage leading from said cup, there being a passage connecting said discharge and drain passages; and a valve operative with said first mentioned valve, for governing said last mentioned passage, said second mentioned valve being so positioned that when said first mentioned valve is in closed position said second mentioned valve will be in open position, and vice versa, substantially as described.



1,032,503. Street-Service Box for Water and Gas. William M. Rapp, Atlanta, Ga. In a curb box for valves of water or gas pipes, the combination of a pipe leading down to the curb cock, with a top casting having a deep socket portion loosely fitting over the upper end of the pipe and adjustably clamped thereon and also having an extended outer flange portion of large radius provided with the official record marking of the box to designate its location, said top casting further having a central opening of small diameter bounded with an inwardly extending annular flange arranged below the upper surface of the extended flange portion, said annular flange having notches opening laterally into the central aperture on opposite sides thereof, and a removable flanged plug loosely fitting the central aperture so as to be below the upper surface of the top casting and also having two oppositely arranged lugs integral with its lower part to pass through the notches in the annular flange of the top casting and engage the under side of the unnotched portions thereof when the plug is formed.

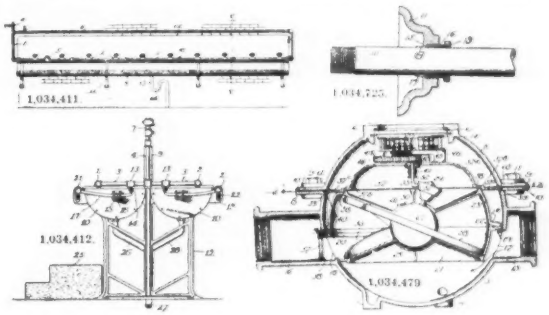


1,034,499. Joint. Thomas F. Payne, Pittsburgh, Pa. A fastening device for joints, comprising a sheet metal member having a plurality of eye-shaped enlargements and adapted to be received in complementary formed recesses in the parts to be joined, said eyes being expansible to effect binding thereof in the recesses.

1,034,724. Tool-Shank. Henry Mueller, deceased, Decatur, Ill., by Ora B. Mueller and Adolph Mueller, executors, Decatur, Ill., assignors to H. Mueller Manufacturing Co., Decatur, Ill., a corporation of Illinois. A tool of the character described having an integral shank at one end provided with a longitudinal groove extending throughout the length of the shank, and an annular shoulder at the base of the shank, the wall of said shoulder being flat and arranged at a right angle to the longitudinal axis of the tool, and said groove intersecting said shoulder.

1,034,919. Production of Aerated Baths. Andreas Walther Leuschner, Dresden-Alt, Germany, assignor to Christian H. Weber, New York. Apparatus for producing bead-like aerations in baths, consisting of a bath tub, a perforated pipe lying in the bottom of the bath tub, a water supply pipe communicating with the bottom pipe, a water jet injector leading into the water supply pipe, a warm water pipe leading into the said water supply pipe, and an air pipe through which air is drawn by the water jet injector into the water supply pipe; substantially as described.

1,034,411. Sanitary Drinking-Fountain. Joseph H. Brady, Kansas City, Mo. A fountain of the character described, consisting of a supply-pipe having outlets therein, convex mouth-pieces on said supply-pipe over the outlets therein, forming reservoirs, said mouth-pieces having discharge openings therein, a spout to collect the overflow from said mouth-pieces, a valve between two of the said mouth-pieces, a feed-pipe communicating with the supply-



pipe, a branch-pipe communicating with said feed-pipe and the supply-pipe, and a discharge-pipe leading from the bottom of the spout and provided with a trap, for the purpose described.

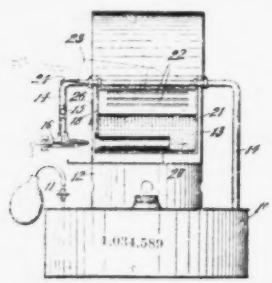
1,034,725. Pipe-Flange. Philip Mueller, Decatur, Ill., assignor to H. Mueller Manufacturing Co., Decatur, Ill., a corporation of Illinois. A pipe flange structure comprising a flange having a screw-threaded opening of uniform diameter therethrough and adapted for loose engagement about a pipe, the flange further having an annular rib projecting into the inner end of said screw-threaded opening, a bushing snugly embracing the pipe and engaging the opening in the flange, the bushing having external screw threads midway between its ends adapted for engagement with the internal screw threads of the flange whereby the bushing is moved into the opening of the flange, the inner end of the bushing beyond the threads being slightly tapered and slitted longitudinally, said tapering end being adapted for engagement against the annular rib whereby the tapered end is contracted upon the pipe, the outer end of said bushing beyond said threads having exterior annular faces adapted to receive a suitable turning tool whereby said bushing may be moved into the flange.

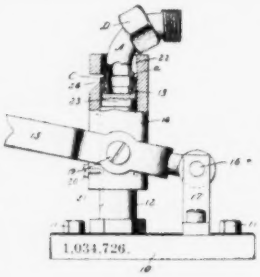
1,034,412. Sanitary Drinking-Fountain. Joseph H. Brady, Kansas City, Mo. In a fountain of the character described, a trough, a mouth-piece pipe supported thereon, levers fulcrumed on the trough, self-closing valves connected with the mouth-piece pipe and adapted to be opened by said levers, brackets fixed on the trough, a rod passing through said brackets and attached to said levers, and springs mounted in the brackets for restoring the rod and levers to normal position.

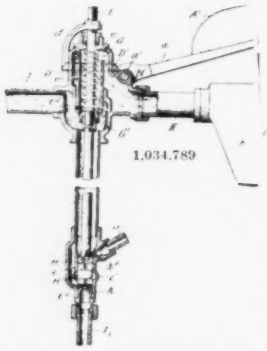
1,034,479. Water-Meter. William J. McCourt and Michael W. Coghlan, Chicago, Ill. In a water meter, the combination with an outer casing comprising a body portion having supply and discharge ports and an internal annular ledge at its upper end, and a cover therefor provided with a glass top, of a measuring device located in said body portion and having an upper annular edge spaced inwardly from said annular ledge of the outer casing, an imperforate partition member comprising a central dome-shaped portion above said measuring device, an intermediate flat annular portion resting upon and forming a water-tight joint with the annular upper edge of said measuring device, and an outer annular portion spanning the space between the upper edge of said measuring device and the opposite inner wall of said outer casing and at its outer edge resting upon and forming a water-tight joint with said annular ledge, and a registering mechanism mounted on the central dome-shaped portion of said par-

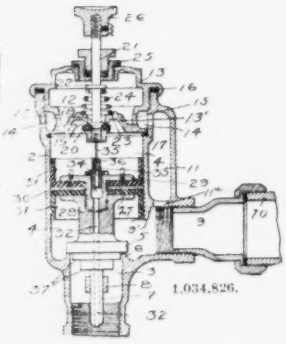
tition directly beneath the glass top of said cover, substantially as described.

1,034,589. Soldering-Iron Heater. Fredrick H. Denicke, Manston, Wis. A heater for soldering irons and the like, comprising a pair of burners, means for movably mounting said burners and for supporting soldering irons thereupon, a single stationary burner nozzle for supplying gas to either of the said burners, said means for supporting the soldering irons being movable under the weight of the soldering irons for shifting the burners with relation to the stationary nozzle, whereby the gas will only be admitted to the burner which has the soldering iron above it.


1,034,589.


1,034,726.


1,034,789.


1,034,826.

1,034,726. Apparatus for Attaching Collars or Flanges to Pipe-Fittings. Philip Mueller and Anton C. Schuermann, Decatur, Ill., assignors to H. Mueller Manufacturing Co., Decatur, Ill., a corporation of Illinois. A machine for the purpose described comprising a fixed supporting member exteriorly tapered at its upper end to form a rest for a ring and having a socket at the same end to support an externally grooved fitting, a sleeve member surrounding said supporting member and adapted to move longitudinally thereof, said sleeve member having its upper end tapered correspondingly to the tapered end of the supporting member and provided with a transverse slot, the lower edge of which is adapted to be raised to the same plane as the top of the supporting member, means for preventing the rotation of said sleeve, and means for longitudinally moving the same.

1,034,789. Flushing Device for Water-Closets. Philip Haas, Dayton, O. In a tank flushing device for water closets, the combination with the bowl, of a passage for supplying water to the bowl to flush the same, said passage including an inlet and outlet chamber and a valve casing connecting them, a valve adapted to close the passage by entering and filling a portion of the valve casing extending into the inlet chamber, said valve having a depending flange of flexible material adapted to be expanded by the water pressure, the end of the valve casing engaged by said valve being provided with notches or recesses whereby there will be water pressure upon the outside as well as on the inside of the said flexible flange.

1,034,826. Flushing-Valve. Thomas F. Payne, Pittsburgh, Pa. In a flushing valve, a casing having inlet and outlet ports, a valve controlling one of said ports, a piston in said casing controlling said valve, a relief chamber above said piston, a valved port connecting said relief chamber and the piston chamber, a drainage passage from said relief chamber to the outlet side of the valve having a restricted or jet discharge port at its delivery end, and a baffle on the upstream side of said jet discharge port at its junction with the outlet passage to divert the outlet stream, prevent its backing up into said drainage passage, and tend to produce a vacuum in said drainage passage.

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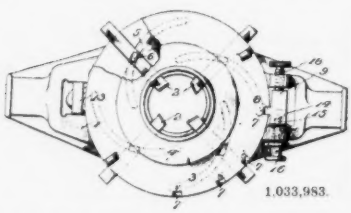
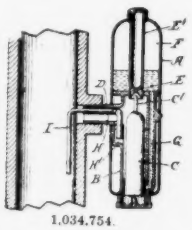
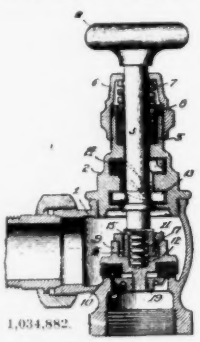
1,033,983. Thread-Cutting Tool. Bradford Borden, Toronto, Ontario, Canada, assignor to The Borden Co., Warren, Ohio, a corporation of Ohio. In a tool for cutting tapered threads, the combination with a rotatable and longitudinally movable chaser-carrier, a series of radially-arranged chasers, and a chaser-engaging plate rotatable with, and also relatively to, the chaser-carrier, of a post rotatable with said chaser-carrier but not partaking of the longitudinal travel thereof, such post engaging said plate for controlling the independent rotation thereof, a support for said post for permitting it to be moved laterally to free said plate and means for detachably retaining the post in engagement with said plate.

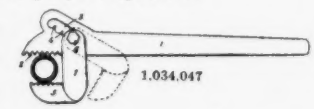

1,033,983.

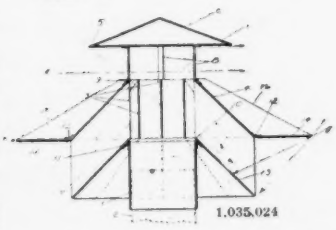

1,034,754.

1,034,754. Siphon-Valve. Everett P. Allen, Chicago, Ill.; Mary A. Allen, executrix of said Everett P. Allen, deceased, assignor to Dole Valve Co., Chicago, Ill., a corporation of Illinois. The combination with a valve of a siphon passing through the valve-inlet adapted to draw water therefrom under predetermined conditions, said siphon comprising two parts adjustably connected together when the parts are assembled in their operative relation so that they may be rotated or moved longitudinally with relation to each other.

1,034,047. Pipe-Wrench. Andrew Weigand, Malvern, O. The combination of a handle provided with a toothed jaw portion and an elongated slot located at an angle to the toothed portion of the handle, one side of the slot provided with projections and recesses located between the projections, an L-shaped jaw provided with teeth and said L-shaped jaw adapted for adjustment and reversal, substantially as and for the purpose specified.


1,034,882.


1,034,047.


1,035,024.

1,034,882. Valve. Richard Teller Crane, Chicago, Ill., assignor to Crane Company, Chicago, Ill., a corporation of Illinois. In combination in a valve, a disk provided upon its upper surface with a spring receiving opening and a collar, a valve stem having at its lower end a head fitting inside the collar and provided with a spring receiving opening in line with the opening in the disk, a thimble screw threaded into the collar for maintaining the head of the stem in the collar and a coil spring mounted in the opposing openings in the stem and disk.

1,035,024. Chimney Cap and Ventilator. Ole B. Madison, St. Johns, Ore. A chimney cap and ventilator comprising a collar, a truncated cone secured by its top to the top of said collar, partitions secured in radial position upon said cone, a similar cone secured upon said partitions, guide-vanes secured in radial position on the upper cone, the base of said vanes being formed in the horizontal plane of the base of said cone.